AMERICAN AGRICULTURIST.

Agriculture is the most healthy, the most useful, and the most noble employment of man.—WASHINGTON.

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AND

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WORK FOR JUNE, NORTH AND WEST.

General Remarks.—A portion of the work neglected to be done in May, or impracticable to be performed from the state of the climate, or the backwardness of the season, as recommended in our last number, may be accomplished early this month. Such as the *felling of resinous timber, hauling fuel, sowing Indian corn for soiling, planting corn and potatoes, as general crops, shearing sheep, sacking wool, &c., &c.*

Peeling Bark.—The bark of the hemlock spruce, and of the black oak, (yellow oak of New England,) may now be peeled, without reference to the state of the tide or the face of the moon. If intended for tanners' use, it should be exposed a few days to a hot sun, immediately after being taken off, turning the rind or epidermis side outwards or upwards during foul days and nights, so as to prevent it from becoming wet by rain or dew. When thoroughly dried, it should be carefully housed, or compactly piled up and covered over at the top with refuse boards.

Planting Potatoes.—If your land be rich and warm, and your potatoes are beset with vigorous sprouts, an inch or more in length, they may be planted as late as the 15th of this month, with a prospect of a tolerable crop. For directions for planting, &c., see pp. 155 and 156 of our seventh, and p. 55 of the current volume.

Millet for Soiling Cows.—This plant may be sown for the purpose of soiling any time this month. It will flourish on any soil adapted to the cultivation of Indian corn, but will produce the heaviest crop in a deep, rich loam, refreshed, if necessary, with an abundance of street or barnyard manure. The ground may be prepared as for ordinary crops of corn or grain, and the seed may be sown broadcast, at the rate of about one bushel to the acre, or it may be sown in drills from twelve to

fifteen inches apart. Like Indian corn, when cultivated for soiling, it may be sown at successive periods in order to keep up a regular supply.

Cultivation of Buckwheat.—This valuable grain may be sown any time from the middle of this month and the 20th of July, with a certainty of maturing its seeds. The soils most congenial to buckwheat are those of a light sandy texture, rather dry and warm. Many have failed in the cultivation of this grain in consequence of carelessness and lack of attention in managing it. The soil should not only be replete with soluble, extractive matters, capable of yielding nutriment to the plants, but of such a texture as to admit of its being reduced by the action of the plow and harrow, to a perfectly fine tilth. On clayey soils, this crop has been rarely known to succeed. The most congenial medium is upland green sward, inverted in June. Purity of seed, also, is another important consideration that demands attention. It should be of good quality as to fullness and soundness, and sown at the rate of about a bushel to the acre. Rolling the surface of the soil, after sowing, will be found highly beneficial, as it not only tends to compress the soil around the seed, and thus promote its germination, but greatly facilitates the labor of harvesting—an operation requiring great care in order to prevent the loss of seed.

Cultivation of Ruta-Baga Turnips.—The seed of the ruta-baga or Swedish turnip, may be sown as late as the 15th of this month. It is usually planted after a crop of potatoes, wheat, or Indian corn; but if a virgin soil, or old pasture sward is chosen, it will materially lessen its liability to insects and other enemies. It is generally sown in drills, about two feet apart; and on heavy lands, these should be slightly ridged. The plants must be successively thinned, to prevent interfering with such as are intended to mature, but enough should remain to provide for casualties. Where there is a deficiency, they may be supplied by transplanting during showery weather. They should be left six or eight inches apart in the drills. The Swedish turnip is a gross feeder, and requires either a rich soil or heavy manuring; though the use of fresh manures has been supposed to facilitate the multiplication of enemies. Bones, ground and drilled in with the seed, or a dressing of oyster-shell lime, ashes, plaster, and salt are the best applications that can be made. An early sowing, also, gives time to plant for another crop in case of failure of the first.

Weeding and Hoeing Field Crops.—This should be attended to as soon as the season and the growth of the young plants will admit. In weeding or hoeing your corn, see that all the grubs are dug up and killed, and the hills replanted, wherever they have been destroyed. Plaster, poudrette, wood ashes, or oyster-shell lime may be scattered around the plants at this hoeing or the next.

Destruction of Insects.—All insects injurious to vegetation, such as caterpillars, span worms, striped bugs, rose bugs, &c., &c., should be collected and burnt. Examine the roots of your peach trees and destroy the borers, as practised by Mr. Stoothoff, a notice of which may be found at p. 55, in our seventh volume.

Cutting Grass and Curing Hay.—This must depend on the kinds of grass cultivated. Timothy affords nearly double the quantity of nutriment, if cut after the seed has formed, instead of while in flower, and it is then much more relished by horses and a portion of the stock. This grass, therefore, should never be cut for them, except when the seed is formed. The proper time for harvesting, is between the milk and dough state, when it will nearly ripen after cutting. Orchard grass, on the other hand, although possessing two sevenths more nutritive value for hay in the seed, yet as it is more tender, and much preferred by stock, when cut in flower, and as it continues to grow rapidly afterwards, should be always cut at that time. Even a few days will make an important difference in the value of grass, when cut for hay. The kind of grass, and the stock to which it is to be fed, cannot, therefore, be too closely noted, to detect the precise moment when the grass will best subserve the purpose for which it is intended.

Many farmers do not consider the scorching effects of our cloudless June or July suns, and the consequence is, that hay is too much dried in this country. Unless the grass be very thick and heavy, it will generally cure sufficiently, when exposed in the swath for two days. When shook or stirred out, it should not remain in this condition beyond the first day, or it will thus lose much of its nutritive juices; nor should dew or rain be permitted to fall upon it, unless in cocks. It is better, after partially drying, to expose it for three or four days in this way, and as soon as properly cured, place it under cover. It is a good practice to salt hay when put up, as it is thus secured against damage from occasional greenness; and there is no waste of the salt as it serves the double object after curing the hay, of furnishing salt to the cattle and the manure heap.

Clover should be cut after having fully blossomed and assumed a brownish hue. By close cutting, more forage is secured, and the clover afterwards springs up more rapidly and evenly. The swath, unless very heavy, ought never to be stirred open, but allowed to wilt on the top. It may then be carefully turned over, and when thus partially cured, placed in high slender cocks, and remain till sufficiently dry to remove into the barn. Clover may be housed in a much greener state, by spreading evenly over it in the mow, from ten to twenty quarts of salt per ton. Some add a bushel, but this is more than is either necessary for the clover, or judicious for the stock consuming it; as the purgative effects of too much salt induce a wasteful consumption of the forage. A mixture of alternate layers of dry straw with the clover, by absorbing its juices, answers the same purpose, while it materially improves the flavor of the straw for fodder.

Cutting and Threshing Wheat.—The appearance, or condition, indicating the proper time for cutting wheat, depends on the variety. Thus, when the grain of red wheat can be squeezed between the thumb and finger, without any moisture being forced from it, cutting may always be safely commenced; for it is never better than when harvested in this state, and if cut later, the wheat is seldom so good in quality; besides, serious losses are sometimes sustained, in consequence of high winds when it is

allowed to arrive at a riper state. The white varieties should stand somewhat longer than the red before they are cut.

With respect to the color of the straw, as a sign of maturity, experience has shown, that, if in a healthy state, the ear generally ripens before the straw; the yellowness of the chaff and upper parts of the straw indicates that the crop is fit to cut; and the uniform yellow color of the straw shows that the crop has arrived at maturity, and, if suffered to stand in the field, the kernels are liable to be shaken out by the wind.

Threshing is usually done among extensive farmers, with large machines taken into the field and driven by horse power. If the grain cannot be threshed soon after cutting, it should be carefully stacked, or stored away in barns so as not to mold.

Making Butter.—For full directions for making and curing butter, see pp. 184, 252, and 316, in our fifth, and pp. 173, 207, 214, 226, 228, and 259 in our seventh volume.

Furnishing Stock with Salt.—All cattle, horses, and sheep, living remote from the sea, should be furnished weekly with salt; or what would be better, procure some lumps of mineral salt, weighing several pounds each, and place them in their mangers, or in the pastures, where they can lick them at pleasure. By this means there will be no danger of their eating too much.

Kitchen Garden.—The main point in this month is to preserve the garden free from weeds, which may be done by keeping the surface of the ground clean and loose. Potatoes, (sweet and early,) must now be hoed; cabbages for autumn and winter use may be planted out, and celery transferred into trenches. This should be done in time of rain, or, if in dry weather, late in the afternoon, accompanied with a plentiful watering before and after the plants are removed. Lima and kidney beans may now be sown for a late supply.

Fruit Garden and Orchard.—During this month, and other times, destroy all noxious insects in your power. Prune grape vines, apple and pear trees, but not cherries and other stone fruits. If your peach and apricot trees bear in too great profusion, thin out the fruit, and give what remains a better chance to grow.

Flower Garden and Pleasure Grounds.—Plant out in the borders perennial and herbaceous plants from the seed beds. Box edgings and ornamental trees may now be trimmed.

WORK FOR JUNE, SOUTH.

Cultivation of Sugar Cane.—By the first of this month, the cultivation of a greater portion of the plant and rattoon cane will have been completed. Continue to plow among the cane in old land until July, but not too deep, for there will be danger of wounding the roots.

Cotton and Tobacco.—Keep your cotton and tobacco fields clean, and frequently stir the earth. This will not only keep down the weeds, but greatly aid in resisting drought. The cotton will require the hoes to be passed through it, so as to clear away the weeds left by the plow. Draw the earth lightly around the plants, but do not leave any ridges as thrown up by the plow.

Harvesting Grain.—All grain crops, not yet harvested, will now claim attention. After oats are cut and stacked, it would be a great benefit to the field to plow under the stubble and sow down with peas, at the rate of a half bushel to three pecks to the acre.

Gathering Hops.—These may be clipped and collected for drying before they begin to turn yellow or brown.

Kitchen Garden.—Sow cabbages, cauliflowers, shalots, dwarf and pole beans, mustard, lettuce, radishes, carrots, cucumbers, melons, squashes, pumpkins, roquet, tomatoes, okra, peppers, Indian corn, and the slips of sweet potatoes; and

> "This rule in gardening never forget—
> Sow when dry, and plant when wet."

Fruit Garden, Shrubbery, &c.—Commence the inoculation or budding of your roses and fruit trees. Clip evergreens if they have made a good growth, but not otherwise. Prune ornamental trees and shrubs.

POINTS TO BE CONSIDERED IN THE CHOICE AND ERECTION OF LIGHTNING RODS.

THE most important things to be considered in the choice of lightning rods, are, that they should consist of good conducting materials; good capacity; and a good connexion with moisture in the earth. In addition to these, the area, or extent, of their protecting influence should be regarded; the number of rods required for each building; their position when erected; and the mode of arranging them.

1. They should consist of copper rods, or copper tubes, one half of an inch in diameter when rather short, and three fourths of an inch in diameter when very tall, terminating, in all cases, in a single point at the top, covered with palladium by means of acids or fire.

2. Copper has at least 5½ times more conducting power than bright iron, and palladium nearly 9 times as much. Rusty iron rods or those covered with varnish, or paint, have but feeble conducting powers, probably less than those made of several kinds of well-seasoned wood. No lightning rod, whether composed of copper, iron, or wood, should be painted, or varnished, as that would diminish or destroy their effect.

3. They should penetrate the earth sufficiently far to reach the moist subsoil; or what is better, let them enter a sunken bed of well-burnt charcoal, wood ashes, spent tan bark, or soot, to a depth of three or four feet.

4. In all cases, they should be elevated above every other point of attraction, at least, *four times the diameter of the area*, or *extent*, they are designed to protect; say, in a common-sized house, which is 40 feet in length, 10 feet above the top of the highest chimney or other object extending above the roof.

5. They must be in one entire piece, united by brazing, if necessary, and should invariably maintain, as near as possible, a perpendicular position, *particularly avoiding all abrupt angles, and short turns.*

6. They should be confined to the buildings, at a distance of about four inches from the walls, by means of iron staples or wooden supports, but not by those covered with copal varnish, nor insulated by means of glass.

ROUGH NOTES BY THE WAY.—No. 8.

I LAST left my readers at Mount Airy, Germantown, Pa., from whence I took a course homeward through New Jersey, diverging somewhat from the route usually travelled, in order to see what improvements had been made in the easterly part of this industrious and frugal state.

In that section nearest Philadelphia, considerable attention is paid to raising poultry, which is composed of a medley made up of crosses from the Java, Bucks county, Jersey Blues, large Malay &c., so much mixed from crossing, that it is difficult to obtain a pure breed. The object appears to have been to obtain the largest fowl possible, without regard to name or quality. For this purpose, a breeder will go twenty miles to get a superior "rooster," for which he will pay a very high price. From his progeny, large, fat capons are made and sold at extravagant rates in the New-York and Philadelphia markets to supply the tables of rich families. But, in my humble opinion, the large Malay breed is not the most desirable kind for general use; as the legs of these fowls are long and large; their meat coarse; and they are great eaters, and besides, they lay comparatively but few eggs, which they are very liable to tread upon and break, at the time of sitting. I have bred them in their purity, as well as with all the fore-named crosses, and I am free to say, there is no way to make them profitable except by caponizing them, and afterwards fattening them for market.

The Dorking is a fowl much to be preferred to all others for profit; but as their good qualities have been so minutely described in the back volumes of the Agriculturist, it is needless to recapitulate them here. Their scarcity, as well as the high prices at which they are held by those who breed them in their purity, will, for some years, prevent them from coming into general use. Even in England, where they still sell very high, they are by no means a common bird; although they have been bred there, as a distinct variety, for more than half a century. A friend of mine, some time since, paid a guinea each, for a half a dozen of them, having had his choice out of the yard of an English nobleman. He shipped them from London, to my care, with directions to pay the steward of the ship a dollar for each live fowl delivered in New York, where they all arrived safe, and where their progeny can be had in its purity for $5 per pair.

As to the farming of East Jersey, all that I can learn from intelligent individuals, as well as from my own observations for the last twenty years, the crops, on many farms have been more than doubled within that period. Agricultural papers have had much influence in bringing about this change. A mine of wealth has been opened from the marl beds and lime kilns, the use or application of which has stirred up an inquiry, and a consequent improvement, not before dreamed of. Other fertilizing substances have also been brought into play, such as guano, bone dust, plaster of Paris, poudrette, &c.; but, of all others, guano takes the lead. Where the land is suitable for it, I have seen some of the most astonishing effects from its application, particularly in connection with green-sand marl.

In passing through Morristown, the county seat of Morris county, a most delightful village for a summer residence, I heard of a man who had sneeringly been represented as a "New-York farmer," a "city farmer," a "book farmer," &c. Knowing that the place he occupied was completely run down, at the time purchased, it being, as was waggishly said, "under two-rail fence," and flat on the ground at that, I was determined to see for myself what had been accomplished by a man almost wholly unacquainted both with the theory and the practice of agriculture.

In 1844, he commenced erecting his buildings, which are peculiar in their structure, all of his own planning, and combining greater convenience, both in his house and out-buildings, than I recollect ever of seeing, from a similar outlay, the whole expenditure not exceeding $6,000. In the spring of 1847, he moved his family from New York, before which time he had done little more than to set out some fruit trees and repair the border fences. His next object was to accumulate manure, sow, and plow under green crops. By the use of bone dust and other fertilizers, he succeeded in growing a fine crop of buckwheat and oats, which he plowed under as deep as he conveniently could without the aid of a subsoil plow. Into his barnyard, which is partly roofed over, he hauls everything that can be collected suitable for making manure, keeping the surface perfectly dry by covering the whole, as it becomes filthy, with refuse hay and straw. It is estimated that he has on his farm, at the present time, 250 loads, (28 bushels to each load,) of barnyard and pig-sty manure; 300 barrels of poudrette, of his own manufacture; 500 bushels of oyster-shell lime; and 14,000 lbs. of horn shavings; and if anything more is wanted, he will make up the deficiency in guano.

This "gentleman farmer" is also paying much attention to the cultivation of fruit, and has some fine specimens of healthy and rapid-growing trees, which he has taken great pains to set out. In planting them, he first digs large holes, say three or four feet in diameter, the bottoms of which he covers with small stones, then with a rich compost formed of turf, leaf mold, wood ashes, bone dust, and oyster-shell lime. Then, after cutting off the tap root, he sets the tree in the position he wishes it to grow, straightening the other roots horizontally, and fills up the hole with good virgin soil, also mixed with bone dust, wood ashes, and oyster-shell lime. After this, he cultivates his trees as he would a crop of corn.

He is reclaiming his wet lands, (otherwise worthless,) by under-draining, the effects of which already give good evidence that they will soon be worth $100 per acre, and will pay the interest of three times that amount when they are laid down in grass.

SAMUEL ALLEN.

Morristown, N. J., April, 1849.

EFFECTS OF DISSOLVED AND UNDISSOLVED BONES.—Fear has always been entertained that bones would not operate sensibly on heavy soils; and with *undissolved* bones, there is no question that this fear is well founded; but with *bones dissolved in sulphuric acid*, or otherwise, these fears are groundless.

ADULTERATION OF FOOD.—No. 12.

Wines.—The most frequent fraud in the wine trade, is the mixing of wines of inferior quality with those of a superior grade. In many cases, the cheaper kinds are flavored and substituted for the more expensive ones. For instance, the Sherry, of Xeres, in Spain, is commonly colored by the addition of "must," boiled down to one fifth of its original volume; but in England and elsewhere, by burnt brown sugar, or spirit coloring. Amontillado, another very excellent nutty wine of Spain, is often added to Sherries deficient in flavor; and various other ingredients, as the essential oil of bitter almonds, bitter almonds in substance, cherry-laurel leaves, &c., are also employed for a like purpose.

Alum is added to new and poor red wines to brighten their color; and to pale, faintly-colored Port, the petals of red poppies, beet root, Brazil wood, and logwood are employed, together with the juice of elderberries, bilberries, privet berries, mulberries, and sloes, to deepen its color. In cases where an additional astringency is required, oak sawdust, kino, salts of copper, alum, and extract of rhatany are used. A factitious *boquet* is also often given to wine by the addition of orris root, sweet brier, bitter almonds, elder flowers, clary, &c., &c. When wine has become very acid, it is rendered drinkable again by the addition of a certain quantity of the carbonates of soda, potash, or of lime. Sometimes this acidity is removed by a far more dangerous remedy, namely, by the addition of litharge, ceruse, or the sugar of lead, in which cases, of course, the wine becomes highly poisonous. Moreover, it seems that there is not, as yet known to the trade, any other method of recovering sour or ropy wines, and the small quantity of lead, necessary to be employed, emboldens the dealer to continue its use, by imagining that the very smallness of the quantity prevents any harmful effects following the constant use of wine thus treated. This, however, is not true. For lead, in whatever state it is taken into the stomach, occasions terrible diseases, and wine adulterated with the minutest quantity of it, becomes a slow poison. The merchant, or dealer, who practices this dangerous sophistication, "adds the crime of murder to that of fraud, and deliberately scatters the seeds of disease and death among those consumers who contribute to his emolument." Such, indeed, may be said of all, who adulterate any substance which is employed as food.

This subject may further be elucidated by a continuance of the narrative of the same old broken-down grogseller, alluded to in our last, when his listeners expressed a desire to hear about wine:—"Well, I'll tell you that, too," continued the old toper, "There's scores of 'Wine Guides' that contain instructions for the merchants and publicans. Take a bottle of cheap Port wine, and get a chemist to analyze it. He'll tell you that it contains three ounces of alcohol; fourteen ounces of cider; one ounce and a half of sugar; two scruples of alum; one scruple of tartaric acid; and four ounces of strong decoction of logwood. That's the way I used to make Port wine. Not a drop—not a single drop of the juice of the grape. Ha! ha! Families bought it wholesale—three-and-sixpence the bottle—rank poison! Ha! ha! Nearly all factitious wines possess too high a color, particularly Sherry. The way to make such wines pale, is to put a quart of warm, sheep's blood in the butt, and when it is quite fine, draw it off. I always did that—I didn't tell the families so though."

Some of the audience expressed satisfaction that "the rich were humbugged as well as the poor."

"Humbúgged?" ejaculated old Swiggs, "I b'lieve you! I'll tell you how two thirds of all our Port wine is made. Take four gallons of cider; two quarts of cheap brandy; four ounces of ground logwood; half a pound of bruised rhatany root; and one ounce of alum. First infuse the logwood and rhatany in the brandy and a gallon of the cider, for ten days; then strain off the liquor and mix the remainder of the ingredients with it; put it into a cask; keep it for a month, and it will be fit to bottle. Not a drop of the grape juice! Ha! ha! If the color isn't quite right, an infusion of the raspings of red sanders wood in spirits of wine, will soon give it a beautiful red complexion. But then the 'bee's wing.' Ha! ha! The bee's wing. Eh? A solution of cream of tartar, colored with Brazil wood or cochineal, will give you the best crust and bee's wing you can imagine. There's for you! Port made in a month or six weeks can be passed off for wine that's ten or twelve years old! The corks can easily be stained on the lower ends to indicate age, and, consequently, that it has been long bottled; and who's to discover the cheat? Nobody but the chemist. Ha! ha!"

"Well, I've *learnt something* to-night," said a lounger.

"Learnt something!" repeated the old man; "You know nothing about it yet. You don't known what poison—rank poison—there is in cheap wines; aye, and in the dear ones, too, for that matter. Sugar of lead is the chief ingredient to sweeten soured wine. I needn't tell you that sugar of lead is a deadly poison—any fool knows that. Cerussa, (white lead,) is used to clear muddy wine; and litharge gives a sweet to wines that are too acid. Bitter almonds impart to Port a nutty flavor; cherry-laurel water gives it a boquet; and tincture of raisin seeds endows it with a grapy taste, which it hasn't got and can't otherwise have."

BERMUDA AND CRAB GRASS.

MANY of our southern planters have an ultra hostility to the existence of these grasses on their plantations. We look upon them, however, as a valuable means for contributing to their interests in two ways, namely, *food*, and as fertilizers. If allowed to grow after the crops of corn, cotton, or sugar cane are "laid by," they are in the way of nothing, and produce a good deal of valuable forage, which may be cropped by animals in the fields, or secured as dry feed for winter's use. Few grasses are more abundant or nutritious, when properly grown; and as separate or exclusive objects of cultivation, they will, in many instances, supply what is much needed, and which can in no other way be more economically or abundantly secured. If not wanted for these purposes, they may be plowed under the following spring, and thus

furnish a good dressing of vegetable or green manure to the soil.

To destroy these grasses effectually, where they are decidedly obnoxious, they should be plowed under in the fall, and the roots exposed to frost; and in order to secure this to every part of the roots, let the operation be repeated two or three times while the frost remains. Thorough cultivation the following year, with sweet potatoes upon the field, or any other well-hoed crops, will nearly exterminate such roots as have not been previously killed.

THE COW—HER DISEASES AND MANAGEMENT.—No. 13.

Remarks on Bleeding.—Every person having the direction of the management of cows should be able to perform the operation of bleeding, as circumstances are liable to occur when the life of the animal may be saved by its timely application, where proper assistance cannot be immediately procured.

The method of bleeding requires some attention. In local diseases, or those affecting a part of the body, the nearer it is performed to the seat of the malady, the more effectual it will prove. In the general or constitutional diseases, this is less necessary; and the blood may be drawn from any part where there is a good vein, particularly the neck. It must be remembered that there are two kinds of blood vessels, *arteries* and *veins*. Through the former, the blood is conveyed from the heart towards the extremities of the body where they are connected with the veins which bring it back again to the heart. An artery "pulsates," or "beats"—a vein does not. Hence the difference may readily be known.

The operation of bleeding may be performed by a fleam or lancet; the fleam will be found the best instrument for those who are not acquainted with this process, but the lancet will be preferable where the skin is very thick, and much depth to go through before reaching a vein. These instruments should always be kept bright and free from rust, by means of which, the operation will be more easily performed, and there will be less danger of the orifice, or wound, becoming festered, or foul.

Bleeding from the Nostrils.—This complaint, which is usually attended by a slight fever at its commencement, is more or less profuse, according to the cause from which it proceeds. Although not considered dangerous, to manage it properly, it is necessary that the practitioner should be well acquainted with its origin.. When it is accompanied with a fullness and distension of the vessels of the head, it may be considered as an effort of nature to relieve this state, and it should not be stopped too suddenly. When it proceeds even from hard exercise, or over-driving the animal, the evacuation of blood will remove the fever produced by this cause; and unless the discharge is very profuse, it can do but little harm. But when, on the contrary, it occurs with a cow which is weak and debilitated, and it appears evidently to arise from the thin, acrid state of her secretions, then a check must be put to it as quickly as possible.

The stopping of the blood is always in one's power by external applications; and a very good remedy for this purpose is, to

Take of sugar of lead, 2 drachms; and white vitriol, (sulphate of zinc,) 1 drachm,

and dissolve them in a pint of vinegar. A cloth, dipped in this solution, is to be applied cold behind the ears and back of the horns of the animal, and must be removed as often as the cloth gets warm; or, in place of the above,

Take of blue vitriol, (sulphate of copper,) 1 oz.,

and dissolve it in a pint of vinegar, and apply it in the same manner.

When the bleeding is stopped by these means, which seldom fail, attention is to be paid to the cause from whence it proceeds; and when it is accompanied by a fullness either of the general habit or of the head, in particular, or when it proceeds from any suppressed secretion of the skin or other parts, then these external applications should be made in connection with a general bleeding, and medicines to open the bowels, in order to lessen the excess of fluids in the body. The medicines to be administered in this case are as follows:—

Epsom salts, from ¾ lb. to 1½ lbs.; saltpetre, 1½ oz.; powdered ginger, 1½ oz.

To be mixed, and given in a pint and a half, or two quarts of water gruel. With these precautions, the cure of this malady will generally be found easy.

ON BREEDING.—No. 1.

THE very little attention that is paid to systematic breeding of any species of animal, in this country, does not enable an American writer to give much from his own experience nor that of others, nor to state facts of an interesting nature, on this important branch of agriculture. Our people are not yet prepared for undertakings of so delicate and nice a character. Whether this arises from loose, irregular, and unmethodical modes of education, or from a restless and impatient frame of mind, or from the present habit of the American people to look upward, instead of looking forwards and onwards, or from the want of that fixed feeling that goes with, and belongs to, the idea of a settled and permanent residence, is of no consequence; it bears, however, on our general subject in so far as by these various reasons we may account for the American mind not having yet done much, or anything in this, almost the very highest department of the art of agriculture. If an American farmer of the stand-as-you-are order is asked, why attempts are not made to improve the breed of animals in his country, his reply is, that it does not pay. If, however, he should carry out this coarse idea to all the various conditions of civilized life, and he should ask himself, whether it would not be more economical to live in a log-hut, instead of one built of stone or brick, or to be drawn in a cart by a dog or a donkey, instead of a well-bred horse, he would then see in a question so personal, the absurdity and the illiberality of his response. It is not, in truth, because it does not pay, but because he takes no pride in the object; or because he does not like the trouble of the undertaking; or because his mind does not possess the necessary penetration or perseverance, or has not been prepared by previous training, habit of close observation, and clear reasoning, that are essential not only in this pursuit, but in all where success depends on precise and accurate de-

tails, and does not result from accident nor haphazard.

The writer does not mean to assert, that the breed of animals, in this country, has not very much improved within the last twenty years; on the contrary, the improvement has been marked. The old-fashioned, ragged, rawboned, half-starved, angry and withered-looking beast, which seemed as if its early life had been suckled on hail stones, and in its prime fed on weeds, has given way, in many places, to the large, full, and fat Durham, or some of its crosses. Every day may be seen, on some of the roads leading to this city, from the west, handsome specimens of animals raised in Kentucky, Illinois, and even Missouri; some with the appearance of having been crossed with the shorthorns, and others with no indication of any other descent than that their sire was a bull and their dam a cow. But this improvement is not the result of what is properly called and known as *breeding*. It is rather crossing, or the producing of a fine animal of some particular breed, with an inferior animal of no breed known nor acknowledged among agriculturists.

Breeding, if I understand the word rightly, is the preservation of a breed already formed, as is now done in England with the shorthorns; or else to create, as was done by Colling and Bakewell, from the materials that lay about us, a breed, whose beauty and whose utility shall be the admiration of every one. To do this, requires far higher qualifications than the mere crossing. It exacts a perfect knowledge of what are the fine points of an animal. It requires a nice discrimination of those points, existing as they must, at the first, among the ordinary and imperfect animals that he has at hand, and which form his materials, and the elements of his process. The difficulty of discovering these points, is, no doubt, considerable; the difficulty of adapting and adjusting and uniting them, so as to bring about the end in view, is equally great. When I consider this, I cannot help according to such men my highest admiration. The British can refer with praise, and look with pride and triumph on the genius of their country, their poets and philosophers, who have ennobled the name, and made glorious the history, of England.

In New England, and in those parts of our country where her people have gone, may be seen a stock of red cattle, no doubt descended from the English Devons. [?] They are, in many parts, very inferior animals; but that they are capable of being improved, and made equal to any cattle, is made sufficiently clear. At some of the exhibitions in Massachusetts and Connecticut, the size and quality of the animals to be seen there, give clear indications of what might be done by more care and a better judgment; but where capital and industry are superseded by poverty and negligence, or by a spirit of parsimony, more ruinous than either, it is not to be supposed excellence can be reached nor even approached. Ignorance and indolence have no right to assume that they can rival enterprize, activity, and talent; and it is not possible to form a fine breed of animals, nor to preserve one, without the union of these qualities.

An American breeder has, in fact, far better opportunities for succeeding in his undertaking, than either of the distinguished Englishmen I have mentioned. He has no difficulty in selecting. He is not confused and perplexed by a variety of different breeds. He will, at each step, mark the success of his proceeding; and even, after one or two crosses, be in doubt as to what should be done next. He has the best of the British breeds within his reach; and has nothing more to do than to keep them at the high standard at which he finds them, and to engage in the patriotic purpose of regenerating the native breed of his country.

The great principles of breeding are now so well known, as to be accessible to every one. It would be inexcusable, even in an inexperienced person, to be ignorant of these; and he, certainly, must know them before he begins his enterprise, or ill-success, at the start, will probably depress and dispirit, and perhaps force him, in despair, to give up all further exertion. It must neither be supposed that he has undertaken a matter of simple and easy attainment. He can, no doubt, bring males and females also together, and have any number of young; but of what use will they be while alive? and of what value, when dead? These are things of far more importance than the mere procreation of the animal; and in those two questions is involved all, or nearly all, that belongs to breeding as an art.

The first great principle is obvious to every student of nature—it is, that "like produces like." But there is a difficulty in acting on this seemingly simple rule, that includes the chief danger, and most serious obstacle, in this pursuit, and which makes absolutely necessary those high and not very common qualifications—judgment, penetration, observation, and experience. These constitute the genius of the breeder—the intellectual capital with which he is to work—the powers with which he is to create and reproduce something new. There is in this principle of "like producing like," as much evil to be avoided, as there is good to be attained. Disease, defects, or deformity can be inherited and perpetuated, as easily as strength, symmetry, or beauty. Life itself is but a continued inheritance. Every creature that is born, brings into the world something that belonged to an immediate or a remote ancestor; some peculiarity that allies it with its own particular family, besides that which it has in common with its race. Scrofula, insanity, and gout are, in the human family, as sure and as lasting entails, as lands or houses. Among brutes it is the same. Neither time nor successive generations will eradicate ill temper, faults of form, defects of constitution, nor other natural peculiarities; it can only be done by a proper selection of animals the most free from these infirmities. The system of breeding "in-and-in," is ruinous, chiefly from this perpetuating defect. To a certain extent, it may be adopted, until every animal produced has become entirely similar in form and constitution, with those from which it has descended, and those with which it is connected. After that, the declining will commence, which will only be arrested by crossing with some other family.

There is no doubt that Bakewell adopted this system, and probably, Colling, too; and there is little doubt that it is the readiest and simplest mode of

forming animals that will be more remarkable for beauty than strength of constitution, though nature herself at last puts a stop to this; it must be admitted a somewhat revolting process, by destroying the power of reproducing. It seems a truth, worthy of being constantly kept before the mind of those engaged in these interesting, but delicate enterprises, that nature will not allow art to go much further than she has gone herself. Man may carry his refinements almost to the point of creation. He may reach that which to him seems perfection. Heights like these are not inaccessible, though difficult; but when we have attained them, the difficulty is, to preserve our position.

A. L. Elwyn.

Philadelphia, Nov. 1848.

THE GAME FOWL.

This well-known and highly-esteemed fowl, the qualities of which were so ably defended by a correspondent at p. 161, of the current volume, is found to be a distinct variety, truly remarkable in ts eagerness for combat, as well as for the unflinching courage with which it maintains its fight under circumstances almost incredible to those who never have witnessed the exhibitions that formerly disgraced every Christian country on the globe.

Fig. 43.—The Game Fowl.

The exterior qualifications of a male bird of this variety, as described by a late writer on "Domestic and Ornamental Fowl," is, head thin along, or if not, very taper; a large, full eye; beak crooked and stout; neck thick and long (a cock with a long neck has a great advantage in his battle, particularly if his antagonist is one of those cocks that will fight at no other place but the head); his body short and compact, with a round breast (as a sharp-breasted cock carries a great deal of useless weight about him, and never has a fine fore hand); his thighs fine and thick, and placed well up to the shoulder (for where a cock's legs hang dangling behind him, be assured he never can maintain a long battle); his legs long and thick, and if they correspond with the color of his beak—blue, grey, or yellow—I think it a perfection; his feet should be broad and thin, with very long claws. With regard to his carriage, he should be upright, but not stiffly so; his walk should be stately, with his wings in some measure extended, and not plod along, as I have seen some cocks do, with their wings upon their backs, like geese; his color rather grey, yellow, or rose, with black breast; his spurs rough, long, and looking inward. As to the color he is of, it is immaterial; there are good cocks of all colors; but he should be thin of feathers, short, and very hard, which is another proof of his being healthy. Remember that a cock, with all his stoutness, length, and thickness of leg, rotundity of breast, "fine fore hand," firmness of neck, and extent of wing, ought not to weigh more than 4 lbs. 8 or 10 oz.; if he happen to have an ounce or two more in his composition, he is out of the pale of the pit, and is excluded by all match makers, from "fighting within the articles." A bird, to be a bird, "fit for the white bags, the trimmed wing, the mat, and the silver spur" must be light upon the leg, light fleshed, and large boned, but still no more than 4 lbs. 8 or 10 oz.

CULTIVATION OF THE CRANBERRY.

Wherever there is a pond of slight rise and fall, its margin, at a trifling expense, may be fitted up for the culture of this plant, which will continue productive for many years. All that is necessary is, to drive in some stakes two or more feet within the margin of the pond, according to the depth necessary to be filled in, and then place some refuse boards against these, so as to prevent the soil of the cranberry beds from sliding into the water; and lay a parcel of small stones or rubbish in the bottom of these beds, and over them peat or bog earth, to the depth of three inches above, and seven inches below, the surface of the water.

In such a situation, the plants grow readily; and if a few be planted, they will entirely cover the bed, in the course of a year or two, by means of their long runners, which take root at different points. From a very small space, a large quantity of cranberries may be gathered. When properly managed, they prove a remarkably regular crop, scarcely affected by the state of the weather, and are not subject to attack from insects.

A Fact for Farmers.—Farmers may rely on this fact, that most of their luxuriant cultivated crops are produced by the presence, or application of due proportions of *potash*, (as wood ashes, leaf mold, green-sand marl, decomposed felspar, saltpetre, farm-yard dung, &c.,) *phosphoric acid*, (as bones, crushed, burnt, or dissolved, guano, farm-yard dung, oyster-shell lime, shell fish, coprolites, and super phosphate of lime,) and *nitrogen*, (as sulphate and muriate of ammonia, urine, guano, and animal manures generally,) combined with small quantities of lime, salt, magnesia, &c., &c.

AGRICULTURAL TOUR SOUTH AND WEST.—No. 6.

The Ormond Plantation.—This is the name of the Messrs. McCatchon's place. It is the custom of the country, in Louisiana, to give every plantation a name, as the country here is only divided off into parishes, which are equivalent to counties at the north; while the smaller subdivisions are known as points, bends, bayous, and by the names of the plantations. Ormond Plantation is among the oldest sugar estates in Louisiana, having been planted in cane upwards of forty years, by the father of this family, and two or three years before, by his brother-in-law, Mr. Butler, previous to which a little opening had been made by a Frenchman, who raised a little cotton, indigo, rice and corn. Part of the present mansion is the old house, near a hundred years old. Mr. Butler erected a horse mill, (a portion of the building is still in use,) which the late Mr. McCatchon used about twenty years, when he had the present engine and mill put up, and enlarged his sugar house to suit the necessities of the increasing crop.

The place now contains 1,600 arpents, (about one seventh less than the English and American acre,) of land, 850 of which is in cultivation, and from which this family have made 120,000 hogsheads of sugar, and an average of 50 gallons of molasses to each hogshead; that is, 200,000 barrels, or six million of gallons, a sea of treacle sufficient to supply all New England with thanksgiving pumpkin pies, at least one year; and then have enough to furnish gingerbread for all the "muster days" besides. The last crop upon the place was about 550 hogsheads. (In all my statements I shall consider the hogshead 1,000 lbs., that being the understood weight of a commercial hogshead of sugar.) When I was there at Christmas, they had not finished making, and the cane from old land was yielding two hogsheads to the acre, or rather arpents, as the terms are promiscuously applied, but always mean the latter. This good yield they attribute to subsoil plowing, which Mr. James McCatchon told me was worth thousands of dollars a year to them. Another thing, *they never burn trash*, (cane tops and leaves,) but plow all in and let it rot.

To give some idea of the enormous amount of ditching upon a sugar plantation, I will state some items. There are upon this place near 100 miles of leading and cross ditches. The water of these is taken up by three leading canals, some three miles long, and large enough for a considerable boat, that lead the water back through the swamp to a bayou, and thence into Amite River and Lake Maurepas. Then, there is the levee and public road, a mile and a half long, with a ditch on each side, and about 25 miles of plantation roads and two hundred bridges, all to be kept in order. The leading ditches, running from the levee in straight lines back to the swamp, are about three feet deep, and 80 to 100 feet apart, and all have to be cleaned out once or twice a year. The cross ditches are not so deep nor so near together. If you should object to the amount of ground taken up by roads and ditches, you will be told that it is no loss to the cane crop, as it needs the circulation of the air that these spaces give. The roads are ditched on each side and handsomely graded, and when smooth and dry, form most delightful drives. The ground occupied by roads is not lost for a crop. Upon many of them, as soon after the "rolling season" is over, as they can be smoothed off and ditches cleaned out, a crop of oats is sown, which are mowed for hay, and afterwards a crop of crab grass is harvested upon all the roads, ditch banks, and open spots, which makes very good hay, a large quantity of which is required, although there is really little or no winter to prevent cultivated grasses from growing; yet, they are not growing, because, as it is said, the summer sun kills them. The only winter grass of any consequence in the fore part of the winter months is white clover; and the only pasture land is the levee, road, and "batture" in front. In some places "batture" is very extensive; and when not covered with high water, is very valuable for pasturage. Upon some plantations a fair portion of land is devoted to pasture ground, while upon others they can't affort it; and so the whole stock must be fed with hay or fodder, (corn blades,) and corn. This is why the consumption of corn will appear so enormous in some of the statements that I shall give by and by.

There are upon this place 190 negroes, old and young, about half of which are counted as "field hands." The team is 60 mules and 40 yoke of oxen, though the latter are but little used except to haul wood out of the swamp; and there, too, they get a good portion of their living. Some six or eight family horses are also kept. There are in use, 40 carts, wagons, and drays. Some of the carts are enormous vehicles of the kind, though no more so than is common elsewhere. Some work them with three mules abreast, which is most common; but here they are worked with one in the shafts and two ahead. The wheels are often six feet high, and stronger and heavier made than New-England ox carts.

The wagons are equally strong, with beds made to hold 100 bushels, and to tip out the loads. This brings an undue weight upon the hind wheels, which is very great when full loaded with cane, and very injurious to bridges and roads. The plan of setting the beds upon the railroad plan, so as to sit fair and equal upon fore and hind wheels, and shove back to tilt, would obviate this trouble.

The number of plows of all kinds upon this place, is too great to keep count of. It is common to plow with four to six stout mules, and then follow with the subsoil plow. It is the intention of the Messrs. McCatchon to subsoil all the land planted in cane; and they often run a smaller subsoil plow upon each side of the "rattoons." These are canes growing from the old roots the 2d and 3d, and sometimes the 4th year. This, they think, facilitates drainage, which is one of the all-important things to be attended to on a Louisiana sugar plantation. Deep plowing, they think, keeps the coco grass in check, besides all its other advantages. They also make great use of the pea vine to renovate and improve their soil. I first saw here an instrument called a "sword," to cut pea vines when plowing them under. I will, hereafter, give a drawing of this implement, and the manner of attaching it to the plow.

Everything about this place, not only indicates wealth, but judgment, skill, and taste. The negro cabins are all good, substantial, neat, brisk houses, some thirty in number, all of the same size, colored yellow, to correspond with the mansion, standing in an enclosed lot, with the overseer's house, tool houses, corn cribs, &c. The negroes I found all neatly dressed, and fine, healthy, happy laborers. The "cane cutters," thirty-six in number, all in blue woollen shirts, with their formidable-looking weapons, the cane knives, were quite a "uniform company," that might do the state some service in times of peril.

I did intend to describe the Christmas dinner, but I am taking up quite too much room. I must, however, mention the turkey fatted upon pecan nuts, as the finest I ever ate. The turkey is shut in a small, dark coop, and fed upon cracked nuts ten or twelve days, and nothing else. We also had a quarter of a young bear, from a friend over the river, and green peas, beans, tomatoes, beets, carrots, lettuce, and radishes, all fresh from the garden.

The Messrs. McCatchon have a great variety of young fruit trees, and formerly oranges grew here abundantly. In 1822, a hard freeze killed the trees, and again in 1834. At the latter time the family took "a sleigh ride." Everything was encased in ice. Flowers and oranges, in their crystal coating, glistened in the sun like enchanted scenes in the gardens of fairy land. All was bright and beautiful, but it was the beauty of death. Apples have been tried and always failed. In the back yard of the house are two live oaks, that Mr. McCatchon planted about 40 years ago, that are now two of the finest shade trees I ever saw. About eight or ten feet from the ground, the limbs begin to spread out and extend 40 or 50 feet from the body, forming a very thick, handsome, round top.

At this place, I first learned the value of bagasse as fuel. Here is a very well-arranged plan of saving and burning it, a full and minute description of which I will give in my articles upon sugar culture. This year, 350 hhds. were made with this, alone, for fuel under the kettles.

This land, which has been so long in cultivation, and still brings good crops, offers strong evidence of the lasting fertility of the Mississippi soil, when treated only in a decent manner. Of course, it is impossible to manure a sugar plantation in the way that some small tracts of grass and grain land at the north are; and it is not required, if the same system was universal that prevails here, of deep plowing and turning under trash and pea vines, and the use of the subsoil plow and thorough ditching, with judicious changes from corn to cane, and good use of all the manure that can be made. Sugar may be continued to be made from the same land, "even unto the third and fourth generation."

I intended to call upon Judge Rost, whose place is next below Messrs. McCatchons', but he was absent. He is one of the few planters who study science to apply it to practical operations of planting sugar cane. He has a draining machine upon his place, driven by steam. I was also unlucky in not meeting either of the Messrs. Kenner, very enterprising and large planters, between Ormond and Carrolton, the latter of which is connected with this city by a railroad six miles long.

The first acquaintance I made in New Orleans, was Mr. Stephen Franklin, now conducting the agricultural warehouse, established in that city by R. L. Allen, and where every kind of implement used in the cultivation of the soil can be obtained. Mr. F. is an eastern man, but has been so long a resident here, that he is like one "to the manor born." He was formerly a cotton merchant, and is extensively acquainted in the city and country. I commend my friends to him, as a very pleasant and useful acquaintance.

Mr. R. L. Allen, in his "Letters from the South," has given statistical tables, to show the amount of agricultural produce annually shipped to and through New Orleans. But one might just as well undertake to show the magnitude of the ocean, and the fearful raging of the storm at sea, by filling a junk bottle with salt water, and shaking it before the eyes of his pupil, as to try to give an idea of the business upon the levee here, by a string of words and figures. It must be seen, to be believed; and even then, it will require an active mind to comprehend acres of cotton bales standing upon the levee, while miles of drays are constantly taking it off to the cotton presses, where the power of steam and screws are constantly being applied to compress the bales into a lesser bulk, at an almost inconceivable rate per day, while all around are piled up in miniature mountains, which other miles of drays are taking on shipboard, and yet seem unable to reduce in size or quantity, either here or upon the levee; for boats are constantly arriving, so piled up with cotton, that the lower tier of bales on deck are in the water; and as the boat is approaching, it looks like a huge raft of cotton bales, with the chimneys and steam pipe of an engine sticking up out of the centre. And this is but one item of one branch of the produce business of New Orleans.

The whole fields of sugar hogsheads, molasses, pork, beef, flour, lard, oil, rice, meal, apples, and whiskey barrels, and bags of corn, oats, rye, barley, wheat, beans, peas, bran, potatoes, and cotton seed, bundles of hay, together with every other conceivable thing that ever grew out of the earth, are in such wonderful quantities, that the stranger is overwhelmed in wonder to know from whence cometh all this mighty mass of the products of the earth. It is utterly impossible to remove the daily accumulations as fast as they arrive; and at night, and every night, acres of such things as the weather might damage, are covered over with tarpaulin cloths, and guarded by watchmen. The time is rapidly coming, such is the vast increase of production in the fertile soil of the Mississippi Valley, when the whole river front will be insufficient to accommodate the shipping trade of the city, and slips will have to be cut into the land; and great basins, or docks, like those of Liverpool and London, will have to be made, to give room for the giant of commerce to expand his young limbs. Or, perhaps, a great ship canal, from the river to the lake, will not be thought to be a visionary notion, at some future time; or a canal that shall leave the river at Carrolton, and encircle the present city, and enter the river again below, which

would give three times the landing room that there now is, will not be considered half so wild a scheme, as did the idea to some of the ancient inhabitants of New Orleans, of building houses in the swamp where now stands the St. Charles Hotel, and half the business part of the second municipality.

But let us leave speculation of what New Orleans is to be, for who knoweth, and proceed with facts. I have only given these notes just for the sake of trying to give some who have never seen the elephant, an idea of the immensity of the animal. SOLON ROBINSON.

New Orleans, Dec. 28th, 1848.

RAISING CORN WITHOUT MANURE—INFLUENCE OF AGRICULTURAL JOURNALS.

You inquire in the March number of the Agriculturist, what course I adopted to raise 83 bushels of corn to the acre, without manure, while my neighbors grow only 35 bushels, to which I will cheerfully reply.

I have always been of the opinion, that, in agricultural operations, as in those of other arts and sciences, there are certain "little particulars" to be attended to, which have a very important bearing on the result; but these little particulars we are very apt to overlook. When I go into a "smithy," if Vulcan understands his art, he can tell me by the very spark how fares the iron. Look at the chemist—Why is he so very particular about the color that little fluid is taking? He knows that it is the point at which those who are not observing in "small matters," fail. Why does the painter appear so particular in compounding and blending those delicate little patches of olive, blue, green, &c., when his model exhibits no such colors to the eye? The dauber, he knows, will fail in these. In fact, it is the attending to these minute particulars that crowns most of our attempts with success. And why is it that the farmer is the last man on earth to observe those small matters which make success more certain? Why is it that not one in ten takes an agricultural paper, where the minute observations of *thinking* and *acting* men are registered for his benefit? O yes he does attend to small matters—Does he not begin to plant when the moon is in the zodiacal sign of the *goat*, and close, when she is in the sign of the *crab?* I make these remarks, because I feel that I am as much in the "mud," as my brother farmers are in the "mire," and as an excuse for furnishing the "little particulars" of my crop.

My field was a Timothy sod, of about ten years' standing, which I had annually irrigated with water from a spring impregnated with lime. After letting the grass get a fair start in the spring of the year, I put on one of your Yankee plows and "astonished the natives" by turning up a deep furrow slice, leaving the face of the sod directly towards the other side of the earth. I then carefully harrowed the field, still leaving the furrow slices flat. On the 25th to the 27th of April, I planted my corn 3½ by 3½ feet apart, previously taking care to pour boiling water on the seed, for about half a minute; and then, whilst the corn was hot, I stirred in about half a pint of pine tar to a bushel of seed, with which every kernel was completely coated, and afterwards rolled it in dry plaster of Paris. The corn came up very well, four or five spires to a hill.

For the want of good cultivators, such as you have at the north, I constructed some little harrows, 6 feet long by 18 inches wide, filling them with fine teeth, (tines,) by which I eradicated the young weeds, keeping, at the same time, the old sod below, undisturbed. When the corn had arrived at a height of four feet, I took one of our "shovel plows," a very clumsy implement, as you are already aware, and rigged a wheel under the beam, by which I could regulate the depth, in plowing between the rows, so as to prevent my careless hands from moving the sod. This odd plow worked to my admiration, but much to the amusement of my neighbors, who also wished to know what I was doing with "them 'ere little wheelbarrows in my corn." I stood their gibes better than some generals would a "hasty plate of soup," because my "hasty plate of hommony" was at stake. The result was, I raised 83 bushels of shelled corn to the acre, *without any manure;* and I can prove that the other fields in the neighborhood did not average half that amount. H. M. BAKER.

Winchester, Va., April 9th, 1849.

HEREFORD AND OTHER CATTLE.

IN a late number of the Mark-Lane Express, a writer claims a superiority for the Herefords over the shorthorns, on the ground of greater hardiness of constitution, which enables them to bear up under severities of climate, seasons of scarcity, epidemics, and exposure to diseases, which few other breeds can withstand. These are important considerations; and if the breed can be found to *prove up* these characteristics, there will be no difficulty in establishing this fame on an enduring basis; as other prominent and valuable qualities, such as capacity for working oxen, kindly feeders, quick maturers, carrying the greatest weights on the most valuable points, are already generally acknowledged.

As a proof of the high estimation in which they are held, the writer cites the sale of Mr. Tomkins, in which 52 head of grown animals and calves, brought an average of $448 each. One bull, (Phœnix,) sold for over $2,900. Those sold by Mr. Price, in 1841, consisting of 100 bulls, cows, and calves, averaged $260 each. A cow and calf sold for $1,150 at auction. Below we give some of his remarks, which are quite to the point:—

I consider it absolutely requisite that a breeder, to arrive at eminence, should be very particular in his selection of materials to found a herd upon; otherwise he will meet with disappointment at the onset, and may be deterred from prosecuting the pursuit with zeal and interest afterwards. This brings me to what should next receive his special attention—"pedigree;" which is of so much consequence that I cannot see how a breeder can proceed in safety without it. To secure the excellencies I wish to perpetuate in animals, I have always found the surest method of doing it, to breed from those that have possessed them for generations past; and I cannot discover how any one can be influenced to use a male to any extent with well-bred cows, (however perfect in form, coat, and quality,) of mongrel descent. The chances are, that

his offspring *will not* inherit his good qualities, but his and his progenitors' imperfections. There are but few cows that sufficiently combine the many essential qualities of bull breeders. And it is a growing evil to save the male produce of *inferior* cows for bulls, thereby making a bad and worse than useless bull of what would otherwise make a good ox.

The color of Herefords is much diversified. It is well known that there are good Herefords of various colors, such as greys, roans, mottled, and white faces, with and without marks of white on the back, bosom, and abdomen; the rest of the body being dark, or light red. As a well-wisher to the future prosperity of Hereford cattle, I much deplore the fashion, or prejudice, which gives a predominance in favor of a particular color, to the exclusion of all others. To accomplish it, there must be a sacrifice of many good, if not the very best animals, without any *real* advantage accruing from it. A herd uniform in color is pleasing to the eye of a superficial observer; but an individual with any pretensions to a knowledge of the true character of Herefords will discover the characteristics of the breed, notwithstanding the herd contains animals of every color incident to them. Indeed, it is strongly marked in the late Mr. B. Tomkins', and his successor's, (Mr. Price's,) family of Herefords. Although to a great extent I disregard color, I by no means am indifferent about the coat, or covering.

The Herefords, I presume, should have a moderately-thick hide, elastic, and affording to the touch that mellowness, which is only to be acquired by experience. These are indicative of a predisposition to acquire flesh and fat, and it is termed quality. The skin should also be covered with a thick pile of flossy hair, which I like to see waft in the breeze when exposed, (as is frequently the lot of Herefords,) to all the vicissitudes and inclemencies of the weather, looking as if Nature had destined them to endure it, by providing them with a suitable covering. There are many standards of form erected by different judges, but only one can be *true;* and to arrive at the knowledge of that should be every breeder's ambition. Mr. Welles, in his admirable and instructive letters on this subject, which appeared in the Hereford Journal and other periodicals, has given a detailed account of the defective points existing in Herefords, especially as it regards their forequarters, to remedy which, Mr. Price's sort of bulls should be called into active requisition. It augurs well, and is a proof of the correctness of my recommendation that the Hereford prize oxen and heifer, and many of the prize cattle at all the meetings of the Royal English Agricultural Society, were either purely of Mr. Price's sort, or strongly spiced with that blood. I can imagine that an undue attachment to a favorite color, and a love for animals of overgrown dimensions, will operate with some breeders against trying this heretofore successful cross. It is plainly observable that now, *size* is receiving more attention than *form*, at the sacrifice of many points of utility and beauty. We occasionally see a good animal of overgrown dimensions, but more frequently the reverse—"an uncertain bull at an uncertain hop;" neither do I believe there is any advantage in it, as animals require more food and care when driven beyond their natural standard, and, like water forced above its level, will return to it again when the floodgate is withdrawn. I do not, however, advocate diminutive animals, but those with as much size as is consistent with the laws of nature. If the breeders of Herefords steadily keep in view the improvement of their justly-celebrated cattle, the shorthorns and Devons will never supersede them, and they will be enabled to maintain their invidious position at the two great national agricultural exhibitions. GEORGE DRAKE.

Stockbridge, Hants, Feb. 27th, 1849.

ENGLISH MODE OF MAKING BUTTER.

THE following is the mode in which the best butter in England is obtained. If you consider it worth a place in your journal, it is at your service. CHARLES WILLS,

Veterinary Surgeon.

Veterinary Institution,
New York, May, 1849.

The best land for grazing is old pasture, as free from weeds as possible, with abundance of good water. The cows should never be fast driven, heated, nor tormented in any way. They should be housed at night, fed on green food, and the pasture changed when practicable. When going to milk, take saltpetre in the pail, one eighth of an ounce to every eight quarts of milk.

The dairy should be kept very clean and airy, and as near the temperature of 50° F. as possible, with very little light, and completely shaded from the sun, in summer, by trees, or otherwise. Strain the milk into coolers sweet and dry, (never mix warm and cold milk,) keep it from two to four days, then put the whole of the milk and cream into a clean churn, which is is not to be used for any other purpose but the one intended. Boiling water is to be added to raise the temperature to 70°. Care should be taken not to continue churning beyond what is absolutely necessary.

After churning, put the butter into two bowls or pans of pickle, made from pure water and fine rock salt, dried in a stove or by the fire, as common salt, obtained from springs or the ocean, gives the butter a bad flavor. It should then be well washed, and the pickle changed frequently, until all the milk is extracted, working with the hand the two parcels alternately, until the grain becomes quite close and firm, when it is to be cured with the finest dried rock salt and sugar, in the proportion of one ounce of refined sugar to a pound of salt, to be well worked into the butter with the hand, until all the pickle is driven out. The butter should be finished the day it is churned, and then packed as closely as possible into a cask, if it is not intended for immediate use, which should be well seasoned, for some days previous, with strong pickle, frequently changed. The cask should be strong and air-tight, and if not filled at one churning, the butter should be covered with pickle until the next; but no cask should contain more than one week's churning. If the butter should, at any time, appear pale in color after the churning has commenced, a little grated carrot juice may be added, which will not injure either the butter or milk.

REVIEW OF THE MARCH NUMBER OF THE AGRICULTURIST.

"*Maple Sugar* should now be made by all who have trees suitable for it." Doubted. "No tree should be tapped"—stop there; that part is a fact—and I will add the remainder of the sentence by saying, until it is fully ascertained that it will be profitable to you to make maple sugar, while cane sugar is so very low as it is now. Because I doubt the economy of "all who have trees suitable," undertaking to make sugar at all. If there are several persons on the farm, either old or young, male or female, who would not do much else to any advantage at that season of the year, they might engage in this pleasant kind of labor, for it is labor, just as some families can make a few pounds of silk a year, and have it all clear profit. But hire a man and set him to make maple sugar, and ten chances to one that his wages would not buy more cane sugar than he would make. So *all* should not make maple sugar.

Fruit Garden and Orchard.—This is a valuable direction and is suited to all places. Not so are all the directions for "Work South," but as that is to the niggers, and they can't read, I will let it pass.

Rotation of Crops.—As the author of this article has neglected to construct a table suited to the customs of the south, I will make one that is right, as I can prove, "What everybody says is true;" hence, what everybody does is right. Of course it follows that the following rotation upon a light-soil hilly cotton farm in certain sections, is right.

ROTATION OF A COTTON FARM, ACCORDING TO CUSTOM.

1st year—Cotton—cleaning, log-rolling, grubbing, burning new land, stumps, rich soil, plow up hill and down—good crop.

2d year—Cotton—stumps, old logs—good crop.

3d year—Cotton—land pretty clean, timber mostly burnt up, roots rotten, some small gullies commenced—crop so-so.

4th year—Cotton—grass, gullies, worms, shallow plowing, and deuce take the land, I havn't made half a crop.

5th year—Cotton—more grass, more gullies, more worms, more cursing, and next to no crop.

6th year—Cotton on the best spots, irreclaimable gullies, and broom sedge on the balance—mighty sorry crop, I shall have corn to buy on credit.

7th year—Dogs take that *old field*, I wont try to make a crop on it.

8th year—The soil gone down the river, and the owner gone to Texas.

9th year—That old abandoned plantation.

10th year—*The last remains*, sold at sheriff's sale.

I say, John, them 'ere cotton planters down south are all getting rich, aint they?

Well, I can't say. If they are, the land is not.

Grasses, Meadows, and Pastures, No. 2.—This is an extract from Allen's American Farm Book; and if it is a fair representation of the whole book, it indicates that the work is a most valuable one. Such an article as this, is just such a one as ought to form reading lessons in every school where farmers' children are educated. How many of the scholars of such schools know the names of the grasses they daily walk over, and upon which the whole income of the farm, perhaps, depends? In this article, the common and botanical name is given, with a plain description, and a cut showing the appearance of each kind in such a manner that any child might soon learn.

While upon the subject of grass, I wish to inquire if the mosquito grass of the great western prairies has ever been introduced into our domestic cultivation? It strikes me that this would be a very valuable grass for the south, where the complaint is that they cannot grow cultivated grasses. It is a remarkably nutritious grass. The buffalo and wild horses could hardly live, if it were not for this kind of grass. It appears a very hardy as well as a constantly green grass, and I have no doubt but it may be introduced into cultivation.

Hybridization and Cross Fecundation of Plants.—This is a valuable and interesting article, and I hope the writer will continue and give short practical directions, so that any common person can *learn the trade*, for everything of this kind, no matter how simple and easy to the master workman, is a trade that must be learned by the apprentices, before they can set up business for themselves. Let them commence on some very common plant at first; Indian corn, for instance, and watch the result. How few there are that even believe in hybridizing much more know how to practice it. They plant cucumbers, squashes, melons, and gourds, in close proximity to each other, year after year, and then wonder at the fact of their "seed running out." It is a common thing in these days, to hear men arguing that "peach pits from good peaches will produce the same good peaches." But these are men that argue without knowledge. They don't take your paper, neither do they believe that agriculture is a science that should be taught in schools.

American Prodigality.—True, every word of it, and yet who believes it? But the fact is, we are a nation of gormandizers. As Mr. Colman has given, in his European tour, some of the bills of fare of European laborers, let me give one of many American farm houses that I wot of.

For Breakfast—Coffee or tea, with cream and sugar, just as much as is desired. Fried bacon, and in the season, eggs always. Cold beef or hash, or perhaps fish, and often fresh meat. Irish or sweet potatoes, good butter, and plenty of it; cheese, ditto; pickles, stewed dried fruit, light and white flour bread, corn bread, or hot cakes, hot biscuit, often pies or cakes.

For Dinner—Coffee, sweet milk or sour, or buttermilk, as may be preferred. Boiled pork, beef, potatoes, turnips, cabbages, beets, &c. White loaf bread and butter, cheese, pickles, stewed fruit, and almost always pie or pastry.

Supper—The cold meats and vegetables from dinner, or perhaps a hot dish of meats or fish, or some broiled chickens, and coffee or tea, of course, with bread as before, to which add a little "tea cake." At each meal, all the condiments, and provocatives of appetite, such as mustard, catchup vinegar, pepper, salt, pickles, &c., are usually on the table.

During harvest time, a lunch in the forenoon and afternoon, of cold meats or fowls, with fresh wheaten loaves or biscuits, cakes or pies, and often

accompanied by hot coffee, with cream and sugar, always as a matter of course. And this is diet for farm laborers in America. Truly it is in strong contrast with that of many of the European laborers. Mr. Colman says we are distinguished for our reckless waste of human food. True again. But how few think of the amount of this waste. I was in Cincinnati once, some 20 years ago, at pork-killing time, and I there saw hogs' feet, heads, back bones, and ribs, hauled to the river and thrown in by the six-horse wagon load. They have since found out that such was not economy. But on many, if not most American farms, the heads, feet, tails, and tripes of beeves, and frequently the livers, are thrown away; and upon many large farms, not more than half of the feet, ears, tails, and livers of hogs are eaten, and the upper part of the heads but rarely, or the cracklins, (scraps, or graves,) of lard, and much of the substance of the bones is thrown away. How common, too, it is in the country to see sheep and calves' head and feet thrown to the hogs. Then the waste of vegetable food and grain, is beyond the belief of a European farmer, who has been brought up in the school of economy. Mr. Colman well says that "the refuse of many a family, in the United States would comfortably support a poor family in Europe." There is an equal extravagance in dress and in household furniture, as in living. But who can say —presto—change? Not I.

Cultivation of Lowland Rice.—This grain seems to be considered exclusively a southern crop. Is it necessarily so? I have seen the upland rice grown as high up as lat. 40½°, and am told that lowland rice can be grown as far or farther north. The article under notice gives very full directions about the growth of rice, and is worth remembering by any one desirous of commencing the cultivation of it.

Professor Norton's Remarks on the Establishment of an Agricultural School by the State of New York.—What a pity we had not a few more Professor Nortons in our country. Then the union of the scientific and the practical would be complete. Then the most decisive results would be obtained. When will that blessed time arrive when every state in this Union will have such a school for the education of those who are to devote their lives to the cultivation of the soil?

Rat Catching.—"A Philadelphia subscriber" is answered directly to the point, and he may, now that he has the "secret," set up rat-catching as a business, if he likes. If this recipe will answer the purpose as well as it is recommended, I don't see why these terrible pests of a great portion of the United States could not be exterminated if a simultaneous effort were made. I don't know of but one redeeming quality in these pests; and that is, that they will eat up their small cousins, the mice; provided they are not too well fed otherwise.

Fact in Farming.—"In ordinary land, without manure, high tillage, &c., farming will give but poor returns." Well, now, I say it will give him the greatest return imaginable. For it will give a most complete return of his farm to the most natural state of poverty, that any soil is capable of returning to. A great many people in this country have tried it.

How to Render Cloth Water Proof.—Is that a fact? Can our garments be rendered water proof by so simple a process? [Yes.] And does it not injure the fabric? I shall try it, that is certain. Look to it again, reader.

Sundry Inquiries by a Virginia Farmer.—"Jauffret's manure." Beg your pardon, Mr. Editor, but it does not "remain to be proved" whether some other method of making manure is not the most profitable. In fact, in all the south, I have no doubt but the most economical mode of manuring land, would be with the "cow pea-vine," plowed in green. I have no doubt that covering the land with pine straw, in the south, will always prove beneficial. Independent of its quality as a manure, the mere shading of the land is highly beneficial. As to grafting the peach upon the stock of the mountain plum, what is the advantage, in a country where peaches grow spontaneously as they do in all the south? Make it a rule to have young trees all the time coming on, and then let the old ones die, if they like. What's the odds? If land and trees were both dear and scarce, it would be a different thing altogether.

Facts in Farming, No. 3.—These are just the kind of articles that give value to an agricultural paper, and are just such as every farmer ought to give his attention to and communicate. Probably it will not pay to feed cows Indian corn for milk, in Orange county, N. Y., while on the Wabash or Miami, it would be thought the cheapest kind of feed. It is, or used to be, fed there as though it was not only cheap, but of no value. I wish some of the fodder-pulling farmers, would try the experiment carefully, whether pulling off leaves injures the product of the corn. [It must. Eds.] and also whether it would not be good economy for them to sow corn as detailed by this correspondent, instead of pulling fodder for winter food.

Potato Starch.—How plain is this direction for making this article of necessity in almost every American family, and yet scores will read it, and still run to the store for a little starch. This is another item where we practice so little economy. In all the southern states, the arrowroot itself can be grown as easy as potatoes, but its cultivation seems but little known.

Fattening Poultry.—I am well pleased to find that so sensible a person as E. S. agrees with me upon this subject. A fowl that has grown sufficiently fat for eating, upon a plan where they have free access to the woods and fields, is as much superior to a coop-fattened one, as a beautiful, neat, sweet, wholesome farmer's daughter is superior to one of those hot-bed excrescences of fashionable society. When shall I have the pleasure of *that dinner* with E. S.?

The Proper Soil for Roses.—Add to all this a liberal supply of soap suds, then "go ahead," for you are "all right."

Defence of Romps.—I have always been surprised to see the folly of mothers complaining that their daughters were "such romps," and trying to check them. It always does my heart good to see the happy, robust countenance of a romp. And fifty years ago, it used to do a certain then-young man good to take a hand at the game with them. I hope my "daughter's daughter will rise up and go and see

her daughter's daughter" romping, one of these days, and that I shall be there to see. And finally, reader, if I can no longer enjoy any of the arts of romping, I hope I may live yet a while to advocate the cause of all the dear girls who feel a disposition to let out their youthful elasticity in such innocent and healthful a manner as this much contemned, because "ungenteel," amusement.

REVIEWER.

SUPERIORITY OF BROWN BREAD OVER WHITE.

IN the month of June, 1847, when breadstuffs were nearly at their maximum, in Great Britain, and bread sold at from 11*d.* to 1*s.* 1*d.* the 4-lb. loaf, an article was published in England "On the Nutritive Qualities of Bread in Common Use," in order to show the fallacy of common opinion, by embodying the leading points of a paper written by that able, analytical chemist, Professor J. Johnston, then of Edinburgh. From the period that the older organic chemists announced that all the constituent elements of the human and animal frames were built up, and supported by, the assimilation of certain specific matters contained in the food with which each was furnished, it became a primary object with them to subject every article of such food to severe analysis. *Bone*, *muscle*, and *fat* constitute the three chief materials of animal structure, the blood being the vitalized fluid which contains, and conveys through appropriate channels, those elements that are destined for their ultimate supply.

Bread ranks among the chief of the nutrimental substances destined for the support of the human frame; and therefore, particularly at the time of the late or anticipated scarcity, it became an imperative duty not merely to secure to the public a genuine and pure article, but to point out the means by which pure wheaten meal could be most economically prepared, and so manipulated as more effectually to nourish the body and promote its general health. The professor announced that the best and most nutritious bread could not be made from the "whites," or household flour; but only from the "whole meal," consisting of the entire wheat grain ground up in one way, and used as it comes from the millstones, unsifted, and therefore containing all the bran. He also showed by calculation that 1,000 pounds of such *whole* or *entire* meal contains of the elements of

Muscular matter,	156 lbs.
Fat,	28 "
Bone material,	170 "
	354

Whereas, in fine flour, are found only, of

Muscular matter,	130 lbs.
Fat,	20 "
Bone material,	60 "
	210

If, then, the real elements of food, convertible by assimilation into muscular flesh, fat, and bone, superabound to the extent of 144 lbs. in whole meal, the preference ought to be given to the meal, and, as an inevitable consequence, to pure brown bread, when compared with the white, tasteless, artificial compound, made by the white and "fancy" bread bakers. Some allowance must, however, be made for constitutional variations; for it is proved that, in many instances, bread which contains all the coarse bran becomes flatulent and too laxative, in consequence, perhaps, of irritation produced by the mechanical action of unreduced scaly particles. In such cases, the best "one-way," or grist flour, obtained from the mill, with the separation of the rough bran only, should be substituted.

ALABAMA WHEAT—EARLY CORN, ETC.

WILL your northern readers believe me, when I tell them, as I now do, that I saw to-day, March 27th, a field of wheat all fully headed out and in bloom? To all appearances now, it will be ripe enough to cut in three weeks, if the weather is warm. This early maturity will insure it aganst all danger from rust, and that is about the only danger of failing in a crop in this part of the country. This piece contains three acres, and is upon the farm of Dr. N. B. Cloud, whose name is familiar to many of your readers, as the man who actually makes manure in the south, and uses it, too, and by which he has raised the most cotton to the acre that ever was grown.

As soon as this wheat is harvested, Dr. Cloud will furnish an account of it, and how he started with 300 grains of seed, sent him in a letter. It bids fair now to make 40 bushels to the acre. Dr. C.'s post-office address is, Lockland, Macon Co., Ala. I advise my southern friends to procure seed of him. To *any subscriber of an agricultural paper*, I will engage that he will most cheerfully send a little in a letter by mail, if they will write to him, and not forget to *pay the postage*.

For several days past, I have seen many plows at work among corn, which was up so as to show the rows half a mile or more, and which the hands were "thinning to a stand."

Cotton.—I have seen many hundred acres of cotton up, but as the thermometer this morning, after sunrise, was at 34°F., I presume that it is thinned to death.

This part of Alabama is fast coming to the time when all flour eaten here will be made on the many streams that drain the soil, on which will grow the wheat. Low prices for cotton may yet prove as great a blessing to the state as high prices have been a curse.

SOLON.

Tuskegee, Ala., March 27, 1849.

SAVE THE URINE.—The urine from cattle is worth as much as the solid droppings. Any farmer can easily secure the whole, both in summer and winter, by having a bed of turf or vegetable matter deep enough to catch and retain the liquid. The watery portion soon evaporates, while the solid matter, amounting to about 12 per cent. is incorporated with the turf and held till needed for use.

RICE THE TOUGHEST PLANT IN THE WORLD.—Rice, according to the observation of a southern planter, can stand more *grass*, more *water*, more *shade*, more *rough work*, and come nearer *dying*, and then come to *life* again, than any plant in cultivation. *Drought* is its worst enemy.

USE OF INFERIOR FARM IMPLEMENTS.

We lately saw one of the old-fashioned plows, at the establishment of one of our largest plow manufacturers. On inquiry, we found that it was a pattern on which the proprietors commenced their business, some 15 or 20 years ago; and, although a very good plow, for that period, it is superseded among all intelligent farmers, by other and more recently-constructed patterns, which will do the same work, and with at least a quarter less labor.

We found that the single reason of its now being employed, in preference to others, with most of those using it is, that it has a point, or share, of cast iron, costing some 15 cents each, which admits of being worn out at both ends, instead of one end only, as those now constructed. The saving of 7½ cents, in this share, determines its use; and this is saved at an additional expenditure of team power, costing not less than 25 to 50 cents per day, which by the time the share is worn out, would amount to from $5 to $50, according to the soil. Such wise-acres are never guilty of taking nor reading agricultural papers, to teach them a better system of economy.

ORNAMENTAL FOUNTAINS.

In viewing a spouting fountain, we are only surprised by the elevation to which the water is thrown; but perpendicular columns of water have but little pretence to beauty, particularly when a jet rises from a naked tube in the middle of a basin or canal, and the water falling on its smooth surface, appears unnatural without being artificially grand. Some are so constructed, that their ajutages throw up the water in the form of sheaves, fans, showers, to support balls, &c. Others to throw it out horizontally, or in curved lines, according to the taste of the designer; but the most usual form is a simple opening to throw the spout, or jet, upright. The grandest jet of any is a perpendicular column issuing from a rocky base, on which the water falling produces a double effect both of sound and visual display. Drooping fountains, or such as bubbling from their source trickle over the edge of rocks, shells, or vases, combining the cascade with the fountain, are capable of much greater beauty.

Whatever be the direction of the jet, the discharge of water is always the same, provided that the altitude of the reservoir be the same. This is a necessary consequence of the equal pressure of fluids in all directions. Water, spouting from a small ajutage, has sufficient velocity to carry it to the same height as the water in the reservoir; but it never attains entirely this height, being prevented by various concurring causes. 1st. Friction in the tubes. 2d. Friction against the circumference of the aperture. 3d. The resistance of the air, its weight obstructing the rising column.

Mr. Loudon justly observes, that it is not easy to lay down data on this head; if the bore of the ajutage be too small, the rising stream will want sufficient weight and power to divide the air, and so being dashed against it, will fall down in vapor, or mist. If too large, it will not rise at all. The length of pipe between the reservoir and jet will also impede its rising in a slight degree, by the friction of the water on the pipe. This is estimated at one foot for every hundred yards from the reservoir. The proportion which this author gives to the ajutages, relatively to the conducting pipes, is one fourth; and thus for a jet of four lines, a conducting pipe of an inch and a half diameter; for a jet of six or seven lines, a conducting pipe of two inches, and so on. From these data, the height of the fountain, and the diameter of the conducting pipe being given, the height to which a jet can be forced can be estimated with tolerable accuracy.

The following are a few of the most powerful fountains in Europe, with the perpendicular height to which the water is thrown:—

Fig. 44.

	Feet
The Emperor fountain, at the seat of the Duke of Devonshire, Chatsworth, -	267
Wilhemhœhe fountain, in Hesse Cassel, -	190
Fountain at St. Cloud, France, - -	160
Peterhoff fountain, Russia, - - -	120
Fountain at Versailles, France, - -	90

THE AMERICAN GROUNDNUT, A SUBSTITUTE FOR THE POTATO.

In consequence of the serious results that have been occasioned by the potato disease, attention has been directed from time to time, in various countries, to other plants, in the hope that some or one of them might be found capable of supplying, to a certain extent, at least, the place hitherto filled by the potato. As yet, nothing has been discovered, taking everything into consideration that is capable of superseding that valuable esculent.

The plant, however, to which attention has been drawn for some time, in France, and which appears to be in many respects preferable to any yet tried, is the American groundnut (*Apios tuberosa*). M. Trécul, a Frenchman, who has recently made a tour through North America for the express purpose of obtaining plants with nutritious roots, says:—"I found at Neosho a plant of which I have great hopes. I met with it before in Missouri. Here it is more abundant. It is Apios tuberosa. Although the tubers are still growing, I have found several half as large as a man's fist; they are developed in the summer and autumn, and give in the following year fruit-bearing stems. These tubers, called by the Osages *taux*, are floury, like the potato, and a little sweeter; they do not ripen before the end of autumn."

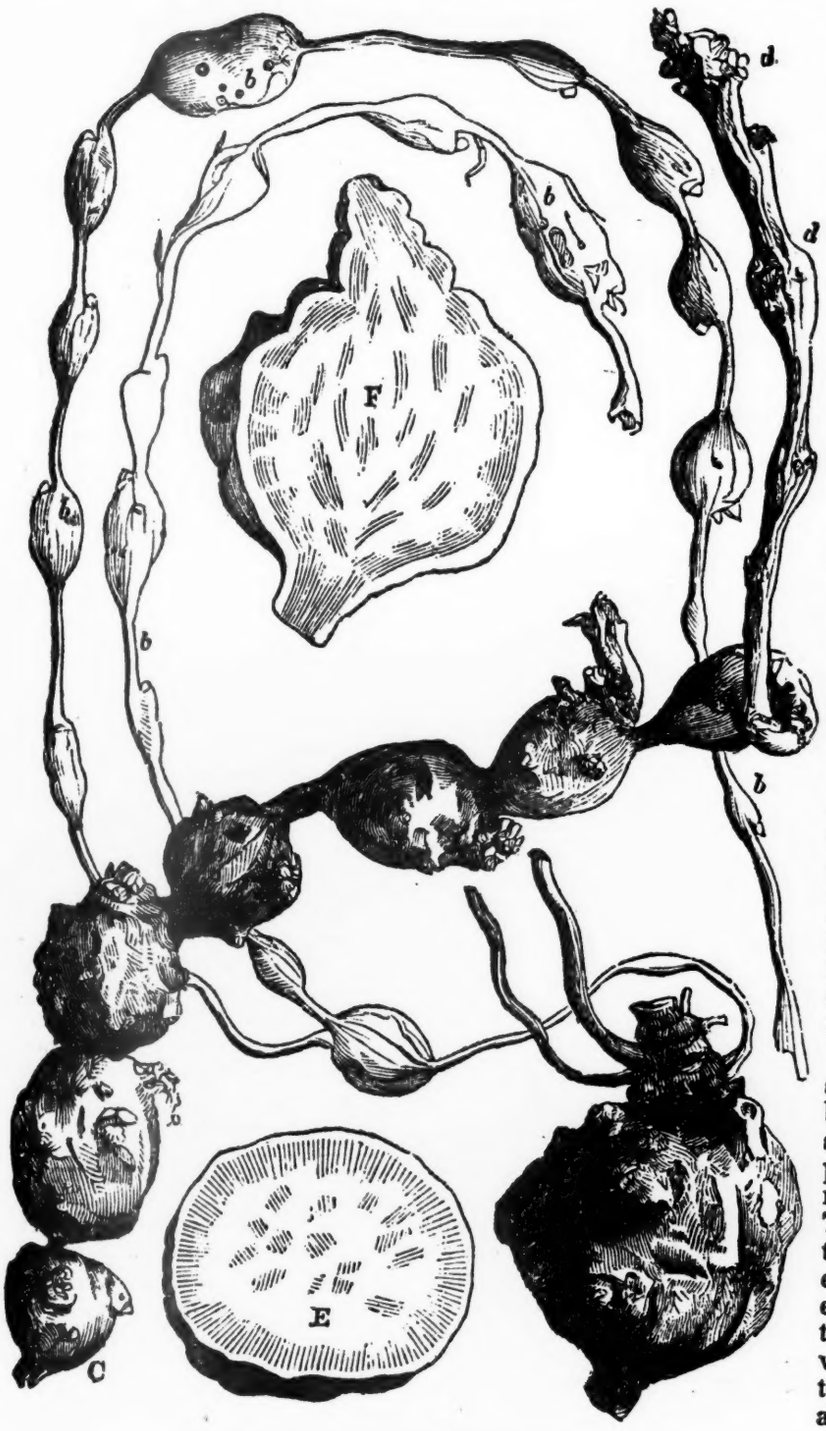

FIG. 45. AMERICAN GROUNDNUT.

Explanation.—Tubers of Apios tuberosa. A, an old tuber, with a double string of young ones, *b*, *b*; C, a string of tubers 2 years old; *d*, *d*, the upper and woody part of the string from which the stems arise; E, a cross section of an old tuber; F, a longitudinal section of the same.

In an account of this plant, recently published by M. Richard, it is described as having a curious underground vegetation; its roots are the size of a quill pen, cylindrical, running horizontally under the soil, but close to its surface, and are often two metres long, (six feet and a half,) and sometimes much longer than that. Here and there the roots swell insensibly; the swellings gradually become spindle-shaped, grow larger, become filled with starch, and form true tubers. The swellings are sometimes close together, so as to form a sort of chaplet. Sometimes they are very unequal and at other times tolerably uniform in size.

Their surface is at first pretty smooth and even, of a very pale brown color, but by degrees, they send out fibres which are often placed in longitudinal series parallel to the axis of the root. These fibres drop off and leave on the surface of the tubers little unequal projecting scars. Independently of these, there are also on the surface of the tubers small, white, hemispherical tumors, about the size of a pin's head, and which are so many eyes, or buds, capable of growing into aerial stems. When the tubers are ripe, they are irregularly ovoid; the largest seldom exceed in size a hen's egg. Part of their surface is even, the other is rough and irregularly tubercled. These inequalities are owing either to the development of aerial stems or of radical fibres. The epidermis

covering the tubercles is brownish grey, and slightly cracked in a longitudinal direction. In the inside, they are of a pure white color, and when cut or broken, a white milky sap oozes out, especially from a quantity of very small vascular bundles disposed in a circle at the circumference, and which principally consist of irregularly-dotted vessels. The sap is quickly condensed, and becomes thick, glutinous, and sticky, like glue. The mass of the tuber is fleshy, firm, and resisting, and is composed of irregular cellular tissue, full of grains of starch. The latter are of unequal size; the largest are of the same shape and size as the grains of potato starch. The tubers, when raw, are sweet, and not at all bitter nor sharp. They resemble both in substance and in taste raw chestnuts. When steamed and cut, the tubers of the apios are very like those of the potato; they are floury, particularly when completely ripe and not too old, for the tubers may be kept in the earth for several years without being destroyed. Their taste is sweet and agreeable, very like that of the potato, but rather sweeter, and with a little of the savor of artichokes, and is by no means unpleasant.

Mr. Richard has cultivated several of the plants himself, and amongst them was one that grew for four years in a very poor soil; it was left almost entirely to itself, without watering. On pulling it up, he obtained more than 100 tubers of different sizes, being equivalent to more than a decalitre (ten quarts). He thinks it quite certain that the same plant placed in a good light soil, well worked and properly manured, which its long roots could penetrate with ease, would give, in one year, more tubers, and those better filled and of a larger size.

All that can be said of these roots is, that in their present state, which is very little removed from that in which they are placed by nature, they appear to approach the most to the potato, both in chemical composition and in taste. The following analyses have been furnished by M. Payen:—

	Potato.	Apios tuberosa.
Dry substances,	25.6	42.4
Water,	74.4	57.6
	100.0	100.0
Azotised matter,	1.7	4.5
Fatty matter,	0.1	0.8
Starch, dextrine, sugar, and similar substances, pectic acid, pectine, &c.	21.2	33.55
Cellulose, (including the skin,)	1.5	1.3
Mineral substances,	1.1	2.25
Water,	74.4	57.6
	100.0	100.00

Thus we see that, compared with potatoes, the tubers of the apios contain more than double the quantity of azotised matter, eight times as much fatty substance, and altogether more than one and a half times as much solid matter (organic and vegetable). The quantity of saccharine and other soluble matters is at least three times greater in the tubers of the apios, than in those of the potato.

The cultivation of this plant may be attended with some difficulty in consequence of its manner of growth. Its long, slender, twining stems, and its equally long running roots, are unfavorable to its being cultivated on a larger scale. The plan I would propose, if its cultivation on a large scale should be attempted, would be, to plant the apios in lines alternating with rows of early maize. The stems of the latter plants, which grow much more quickly than those of the apios, would serve as props, around which the long, weak branches of the latter would twine. Both, if cut before autumn, would make very good food for cattle. Another plan, which has been tried with success by M. de Thury, would be that pursued in many hop grounds, namely, to plant in tufts, for each of which a certain number of small poles are placed to keep up the straggling branches.

One of the great advantages afforded by the culture of this plant is, the possibility of getting the tubers without pulling up the principal stock, from which the roots, with their tubers, annually spring.

THE EFFECTS OF BRIGHT COLORS ON ANIMALS.

It is probably known to every person familiar to country life, but not to all others who may possibly have occasion to use the information, that the sight of a red garment will provoke a bull to an attack, and sometimes almost to madness. Frequent injury has resulted from an ignorance of this fact, and occasionally death has been the result. Other bright colors, strongly contrasted, produces the same effect upon a bull, though in a less intense degree. But a bright red or scarlet seems to excite all the ire of the bovine race; and you have but to shake a flaming jacket at them to provoke the highest state of rage. The same effect is produced on a cock turkey; and a flock of them can as speedily be put to gobbling a declaration of war, as a bevy of pot-house politicians on a fourth of July. Some of the *martial nerves*, we suppose, must be strongly affected by the glare of these exciting colors. It has been suggested, and we think with a good deal of reason, that, if the scarlet facings, sashes, as well as the radiant epaulets and plumes, together with the martial strains of the trumpet, drum, and fife, were wanting in the military parade, we should have little of war in these modern days of civilization.

VALUE OF THE AGRICULTURIST TO A SOUTHERN FARMER.

We are accustomed here to follow the old beaten track of our ancestors, in the disposition of everything pertaining to the farm. Experience, it is true, has driven us to make some improvement in some things, but how trifling this must be when compared with what we might do. All of your suggestions about the arrangement of buildings for convenience and comfort—your directions for arranging for keeping stock, for improving lands, and the disposal of manure, are invaluable to us. There are but very few, if any, of our farmers, who ever saw any guano; nor do they know its value. I shall for the future endeavor to get my friends into the way of reading upon these subjects, and procure a goodly list of subscribers for you.

Daniel S. Robertson.

Cassita, Ala., April 13th, 1849.

HINTS ON THE MANAGEMENT OF HORSES.—No. 2.

FEEDING is one of the most important considerations connected with the management of horses. A good deal of judgment and experience is essential to adapting the food to all the different objects required.

When the colt is by the side of a healthy, well-fed dam, no other provision is necessary for it, beyond what it derives from her well-filled udder. But care is essential to prevent over-exercise or heat in her, or disease of any kind; for the injurious effects will inevitably be disastrously felt by the offspring. As the colt approaches the period for weaning, it may be taught to nibble at oats, bran, and meal, which may be readily done by having either placed before the mare, in a low trough, so as to attract the notice of the foal. The young of all animals are imitative creatures, and will soon learn to eat any food suited to them. By gradually adapting them to artificial food, they will be the better fitted for weaning, when the proper time arrives. Whenever this takes place, the colt should be removed entirely beyond the reach of sight or hearing of the dam. Both worry and fret much less from their remote separation, and sooner become entirely reconciled to it. The dam should have less and coarser food, and the foal richer and more nutritious, till the former has ceased to secrete her milk, and the latter has become fully accustomed to his new regimen. The mare may be milked occasionally till her bag becomes entirely dry.

The food of the colt requires to be abundant and nutritive, without being rich and profuse. It will thus attain its full size, strength, and development much earlier than if scantily supplied. Oats and bran are excellent grain for it, perhaps the best. Roots should occasionally be fed to it through the winter, and whenever deprived of its green forage; and roots may even be fed generously without injury. But sound hay, especially of the tender, succulent kinds, as the rowen, or aftermath, and the early-cut grasses, and clover for winter, and good pasturage in summer, should be the main reliance for the food of the growing animal.

Oats may be fed with liberality, where the price will admit, and this is oftener the case than the farmer is aware, if he will, instead of being at the expense of threshing, cleaning, &c., run the unthreshed oats through a cutting box, and feed the chop as it is, after wetting, and allowing it to stand for a day or two. For this purpose, and indeed for every other, the oats should be cut before they are fully ripened, and when they have become so far matured that they will fill out after cutting. In this condition, the straw is not only much more highly relished by the colt, but both straw and grain are absolutely more nutritive.

Box stalls are essential for the young, in our northern climate, during the winter months. They should be allowed a run in the fields or open yards every day, and room enough to frisk about at their pleasure, when housed. The expense of providing comfortable shelter is comparatively trifling, and the economy of food and growth thereby secured, is considerable. A colt will not only consume much less food when well sheltered, but he will grow faster, and be much less subject to disease. Good summer pasturage is all that is necessary for the colt, when that is abundant. This treatment ought to be pursued till the animal takes his place in the team.

The breaking of a colt may commence at the earliest moment that is convenient. Valuable time should not be consumed with him to any extent, before he is taken in hand to break. But he may be halter broken the first winter, and be subjected to the bit at any time. If kindly treated, he will thus be kept tractable, and whenever required, will be easily subjected to the restraints of the saddle or harness. Indeed, if allowed to run with the team, or be near it, he may easily be taught to participate with his associates, in whose labors he seems to acquire a deep sympathy. If kindly treated up to this time, his breaking and after management will be easily effected.

The feed of the working horse may vary greatly; yet, in each instance, be well suited to the object. Nothing is better for securing health and labor than good, well-cured hay, oats, and carrots; though many other kinds of food may, under certain circumstances, be advantageously substituted for them. Some feed no hay, and as a substitute, give the blades or tops of corn, cut straw, mixed with barley meal, Indian corn, either on the cob, shelled, crushed, or ground, rye, buckwheat, bran, peas, or the English bean or vetch. The potato may be substituted for the carrot for horse food, from which it does not differ materially in nutritive equivalents; but the carrot has a much better effect on the health, and especially the wind of the horse, than any other root. In the absence of both the preceding, parsnips, turnips, or beets may be fed, but they should be relied on only as a change, and not as a permanent food. Each of these act as slight aperients and diuretics, causing a modified looseness of the bowels; and this effect is one essential cause of their decided utility. Carrots may constitute a part of the food of the horse to the extent of 8 to 30 quarts daily, and with decided advantage, when they are the produce of the farm where used; and they should form a small part of the daily rations of every working horse, not otherwise supplied with green food, at the enhanced price which may have to be paid for them. They have a wonderful effect in sustaining health, and restoring it in many instances when partially impaired; and many, who have studied their effects closely, will feed them in moderate quantities, at any cost, rather than be without them. But the stomach of the horse is small as compared with the ox, camel, sheep, llama, and other ruminating animals, and it cannot be loaded with a mass of light, loose food, without decided disadvantage. Flatulent, washy, and bulky, unsubstantial food is the most expensive that can be given to the working horse. He needs, for the most part, a condensed, easily-digested, muscle-bracing, wind-sustaining, nutritive food; and this is more cheaply secured in well-ripened oats than in any other food procurable in this country.

There are several advantages in the use of oats, and to appreciate them fully, we must consider some of the purposes to be fulfilled by food, which is designed to sustain the vital machine, to bring it to maturity, develop and perfect its various parts,

and give to each their greatest perfection and vigor. But in accomplishing these objects, there are two widely-different things to be provided for, both of which are generally secured by the ordinary articles fed to animals. Many substances, however, are much better suited to one object than to the other; and it is important to the skillful feeder to know precisely what is best for each. One purpose of food is, to supply materials for respiration. These are carbon and hydrogen; and they are found in great abundance in sugar, starch, gum, pure fat, and oils of various kinds. The other is to furnish materials for the muscles, tendons, and bones. It may be asked, why do these need renewing when once matured? We can only answer, this is the law by which they are governed. We cannot go beyond this; we can only see that this *is the law*—that nature works in this way, and this way only; and it is our duty simply to conform to her requirements. Every movement of the body, or any individual limb, even the motion of an eyelid, causes some waste of muscular fibre. Every pulsation of the blood is attended with the loss of some matter previously constituting a part of the system, and the addition of other derived from the food to supply its place. Incessant change is stamped upon every animal and vegetable, from the moment of its beginning to the close of its existence; and to sustain these changes, is the object of food for the animal. To supply the matter for the muscles, &c., nitrogenized food is necessary; and for bones, the phosphate of lime is required. These are not found in the kinds of food last named above, and we must look for them elsewhere. The phosphates are generally associated with nitrogenized food to the extent required by animals; and the same is true with regard to the elements required for respiration. We have then to look for the nitrogen combined in the requisite proportion in the food, and we shall have provided for all that is needful for keeping the animal system in full repair.

But there is still another important consideration connected with food; it must be contained within the proper compass; and this compass must be adapted to the capacity of the animal's stomach, which, in the carnivorous and ruminating tribes, embraces the extremes of size and capacity. The aliment contained in the flesh, consumed by the lion or tiger, at a single meal, could not be compressed within 10 times the bulk of grain, 20 of hay, or 50 of roots. Hence, the necessity of augmented capacity of stomach, to supply quantity of nutriment equal to the demand of the system, when the coarser kinds of food are used; and hence the inappropriateness of supplying meat or even flour, equally with roots or straw, only, to the horse. The two former will afford him nourishment, as they would man or the carnivoræ; but they are too condensed, and do not sufficiently distend the stomach, and if used extensively, would soon produce disease; while the latter are too bulky for the horse, and if confined to them, he could not receive sufficient nourishment to do his work.

To come back, then, to the point from which we have digressed, for the purpose of giving some general principles of universal application; we are thus made acquainted with the reasons of the peculiar adaptation of oats as food for the horse. They are highly nitrogenized—they contain an abundance of phosphate of lime—they have a due proportion of starch to supply respiration, and all these elements are mingled in due proportion. The bulky husk which envelopes the farina of the grain, though but slightly nutritious, is still directly, and in a high degree beneficial, in consequence of diffusing the nutriment through a greater mass, which thereby promotes digestion and secures the health of the animal.

Oats ought not to be given to the horse when newly harvested. It is recommended, in England, not to feed oats till a year old, as they are less digestible and nutritive—they are slightly purgative—produce a ready and copious perspiration; and it is alleged by many, that they produce *grease*. The oats of the United States, like wheat and other grain, owing to our drier climate and hotter sun, are more intensely ripened, and will bear to use within a much less time, say four to six months. Grinding would not much improve the oat for horse feed, as they are effectually crushed between their long, ponderous jaws; and the operation produces an abundant flow from the salivary glands, which is an important aid to the digestive powers. Cooking, either boiling or baking the oatmeal, would be attended with decided advantage, as either of these operations tend to prepare the food for easy and rapid assimilation by the digestive organs.

TO CULTIVATE MARSH PLANTS.

To cultivate marsh plants in perfection, nothing more is necessary than to supply them with a moderate quantity of their native soil, placed immediately around the roots; and afterwards keep the ground about them constantly moist.

To effect the latter object, place the root sufficiently deep in the earth, that when the neck, or crown, is covered, there may be a hollow three or four inches deep, and extending a foot or more on every side. Then water copiously, and, in addition, have a keg or large jar sunk near the roots, and keep it full, or nearly so, with rain or river water. Saturate a strip of coarse, woollen cloth; put one end at the bottom of the keg, with a stone upon it, to keep it in its place, and draw the other over the edge to the root; this will act on the same principle as the siphon, and furnish a sufficient, perpetual supply of moisture for a vigorous growth.

Plants that grow in the water require to be constantly submerged, for which an artificial pond, or quagmire, is necessary. M.

KINDS OF FRUIT FOR CULTIVATION.—We advise our friends to try their orchards with a variety of fruit trees, whether of apple, pear, or peaches, and after determining which are best adapted to the soil, let those of the best quality that are found suitable to the land, occupy it almost to the exclusion of the others. There is a wide difference in the production of different trees, and it is in the nice adaptation of each to its most suitable locality, that the profit of fruit growing will be found to consist.

PORK vs. BACON—QUERIES—MANUFACTURED ARTICLES FOR THE SOUTH.

I BEG of some one of your correspondents, who are in the habit of being particular, to give through your journal, some information relative to pork and bacon. Suppose a hog weighing 300 lbs. be cut up, as is usual, with the spare rib and back bone taken out, and the feet taken for souse, what amount of bacon ought I to have? If pork, when killed and dressed, be worth cash 3½ cents per pound, what ought the bacon made from it to sell at, so as to pay expenses of smoking, or, calculating the spare rib and back bone to be worth, say 2 cents per pound? In putting up a surplus of pork, is it advisable to make the sides into lard, if it be worth some time of the year as much as hams? What amount of lard ought 100 lbs. of good corn-fed pork, (sides,) make?

While I am asking questions, I beg to broach another matter, though this greasy subject is quite as important. Your readers, north, may know, that we of the south, use a large quantity of flax thread in making up of negro clothing, cotton sacks, &c. This thread is sometimes bleached until the strength is nearly exhausted, and it is very uneven. It costs from $1 to $1.25 per pound. I ask, cannot a stronger cotton thread be made, giving us more yards of thread, and at the same cost, or less? (*a*) I tried to estimate the number of threads in a pound, by counting the skeins; but they varied so much that I found it quite troublesome. I found 148 threads in the ninth of a pound, which measured 61 inches, and in length by the pound, 2,257 yards. This cost here $1. Each spool of thread is warranted to carry 200 yards. Thus, a dozen spools will certainly make the number of yards in a pound of flax thread, and the spools sell at 62½ cents per dozen. If the thread were put up in hanks, I judge that 2,200 yards could not cost here, profits and all, 50 cents per pound. We require a longer and stouter thread than comes out on spools, say Coates' thread, No. 2, (on one end,) is not large enough. We use, No. 2 needles, J. Hill & Son's "sharps." I think that the right kind of cotton thread would sell readily, and throw out of market the flax thread. We used to make sewing thread; but that universal Yankee nation has made our wives and servants forget all work, and they ought to give us the kind of article we need.

We want, also, an article of socks, (half hose,) to wear in the country and with boots, either colored or unbleached. The thread should be spun almost as large as for Lowells No. 2. The object is, to have a stout article, as the socks so made and sent off to us, would not last that long, if they were not protected from the air. I really cannot see the reason why a strong thick pair of socks cannot be made and sent here for 15 to 20 cents a pair, as well as a yard of Lowell at 10 cents. There is some little sewing, but the less quantity of spinning, weaving, and the less quantity of cotton, with its freight, &c., would go much to counterbalance.

And lastly, the next time you go to Shoedom, do beg the proprietors to send a pair of shoes out of every box, that will last a man to get home, if he rides. I have had a pair of shoes for my farm work last me a year. They cost me $2.50; but usually coarse shoes will not last much over one month, and I have known them wear out clean in two weeks. Not being able to get shoes of the above kind, I had a pair made, cash price $4 only, and the kind we call brogans. A QUERIST.

(*a*) Thread can be made from cotton that will be stronger than rotten flax, but not one fourth so strong as sound flax.

FILTRATION UPWARDS.

IN most countries of the globe, as well as at sea, it frequently happens that people have to resort to the use of water obtained from the clouds, in cisterns or otherwise, or from muddy streams or ponds, which is often turbid, ropy, or fetid, and consequently unfit for cooking, washing, or to drink, before it is filtered, or strained.

An apparatus, that appears to possess the advantages of being easily and cheaply cleaned, when foul, and which will filter water, in moderate quantities, in a perfect manner, may be formed by the arrangement represented in the diagram below.

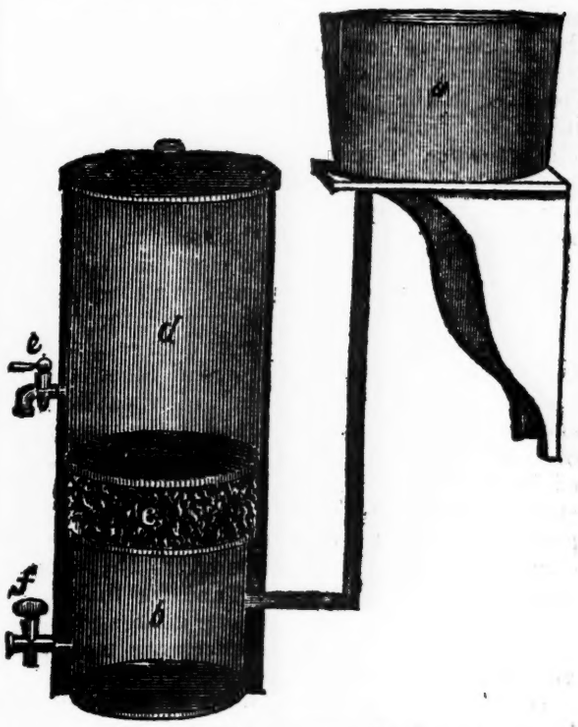

FIG. 46. ASCENSIVE FILTER.

Explanation.—The letter *a*, denotes the tub or box for receiving the water to be filtered, and communicates with the lower part of the apparatus by means of a gutta-percha or tin tube; *b*, *d*, an upright cylinder, divided at *c*, by a stratum of charcoal and clean sand, six inches thick, enclosed between two linen or cotton strainers stretched over hoops; *e*, a cock for drawing off the filtrated water for use; *f*, another cock for discharging the sediment from the lower chamber when foul. By pouring water into the tub *a*, it will descend through the tube into the lower part of the cylinder *b*, and then percolate upwards through the charcoal and strainers at *c*, into the upper chamber *d*, in which state it will be perfectly limpid and pure.

It is obvious that the mud or other matter suspended in the water, before it is purified, will not choke up the strainers, as it commonly does by the downward process of filtration, but settle to the bottom of the cylinder by means of its own gravity, whence it can be drawn off at pleasure at the discharge cock *f*. As often as the strainers and charcoal become infected by animal matter or other filth, they can readily be taken out through the top of the cylinder, cleansed or renewed, and restored again in their place. The water may be kept cool, in summer, by filling the upper chamber *d*, with ice.

The quantity of water that can be filtered daily, by an apparatus of this kind, may vary from five gallons to several hogsheads, according to its size and the height of the receiving tub above the point *c*. The cost of the whole may vary from $10 to $100, according to the size, finish, and nature of the materials with which it is constructed, as wood, metal, pottery, or stone.

AGRICULTURAL CHEMISTRY.—No. 13.

Sugar.—You are familiar with the appearance and common properties of sugar, and are aware that it dissolves readily in water. The juices of trees, grasses, and of cultivated roots contain sugar dissolved in them; and it is also present in the juices of fruits, associated with various acids. The *ultimates*, (elementary constituents,) of sugar, are carbon, hydrogen, and oxygen. I have previously informed you how these several elements are drawn from the air, and the soil.

Starch.—This is one of the most abundant products of vegetation. It is found in all those grains, or seeds, which are commonly used for food, as wheat, rye, oats, &c., and forms a large portion of the weight of potatoes, and several other nutritive roots. From 40 to 70 per cent. of wheat flour consists of starch. It is also found in the woody fibre of some trees. Its presence can always be detected by mixing a solution of iodine with the substance supposed to contain it, when, if starch be present, it will be changed to a permanent blue color. Animal fat is composed of the same elements as sugar and starch, and for this reason, those articles of food containing a large proportion of one or both of these substances are most valuable for fattening stock.

Gum.—There are many different species of gum, though they all possess nearly the same chemical ingredients. You have doubtless often observed it exuding from the trunks or branches of trees; it also exists in the sap of many trees from which it does not exude, and is found in greater or less quantity in the juices of most plants.

Woody Fibre.—This is obtained in a state of purity by boiling small pieces of wood in successive portions of water and alcohol. It is thus obtained in the form of a white, fibrous mass, without taste or smell, and is insoluble in water. Its chemical character is always very nearly the same, from whatever source it is obtained. Woody fibre forms nearly half the weight of the dried stalks of grasses. In beets, and many other roots cultivated for food, the quantity is small, but increases when the root is left in the ground until it becomes old.

The four proximate principles of plants above described, (sugar, gum, starch, and woody fibre,) being composed of the same elements, are frequently changed in plants, or transformed one into another. Thus, "what is starch in one part of a tree may be transformed and conveyed to another part of the same tree in the form of sugar. That which, in the form of sugar or gum, passes upwards or downwards with the circulating sap, may, by the instrumentality of the vital process, be deposited in the stem in the form of wood, or in the grain in that of starch." Some of these changes may be performed by the chemist; he can convert woody fibre into starch, and starch into gum, though he cannot make either of these substances by a direct union of the elements of which they are composed. All he can accomplish in such attempts, is to change one organized substance into another.

Gluten.—This is a soft, elastic substance, obtained by washing dough, and pressing it through a sieve or cloth. It is found in most kinds of grain, though most abundant in wheat.

Vegetable Albumen.—This is also obtained from dough, and is a substance exactly resembling the white of an egg, having the same chemical composition and the same properties. Gluten and albumen contain the same ingredients as sugar, starch, &c., with the addition of nitrogen, and their four ingredients, (carbon, hydrogen, oxygen, and nitrogen,) are united in each in the same proportions. Gluten and albumen are found in the seeds of most kinds of grain, the former being somewhat more abundant. Wheat contains from 8 to 35 per cent. of gluten, and from ½ to 1½ per cent. of albumen. These two compounds are of much value in food, for the reason that they contain nitrogen, an element which enters into the formation of muscular fibre, and consequently is essential to the support of every breathing creature.

Diastase.—This is a substance not found in any seed nor plant, only at the time of germination, (sprouting,) and is therefore produced at this time, and aids in this process. The only part of the seed in which it is found, at this time, is where it is connected with the sprout, and it disappears as soon as the shoot begins to put forth leaves. Diastase, when separated by a chemical process, from its connexion with the germ and seed, is in the form of a white, tasteless powder. On account of the difficulty of obtaining it in a pure state, it has never been analyzed, though it is known to contain nitrogen. The purpose for which it is formed, at this particular time, is to perform a function without which the seed could never germinate.

The following description of the properties and action of diastase, which I copy from Johnston's Agricultural Chemistry, will give you a clear view of its use, and the manner in which it performs its office. "Diastase possesses the property of transforming starch entirely—first into gum and then into grape sugar. One part of diastase will convert into sugar 2,000 parts of starch. The starch in the seed is the food of the future germ, prepared and ready to minister to its wants whenever heat and moisture concur in awakening it to life. But starch is itself insoluble in water, and could not, therefore, accompany the fluid sap when it begins to move and circulate. For this reason, diastase is formed.

at the point when the germ first issues from the mass of food. Then it transforms the starch and renders it soluble, so that the young vessels can take it up and convey it to the point of growth. When the starch is exhausted, its functions cease. It is then itself transformed and carried into the general circulation."

Vegetable Acids.—These are found in various fruits, particularly when unripe, and in nearly all plants, although, in general, they form but a small portion of any plant or fruit. *Acetic acid*, or vinegar, is one of the most abundant and common of this class of compounds. The fermentation of many vegetable juices produces this acid, and it is formed during the germination of seeds. Its union with any of the salifiable bases forms a class of salts called "acetates." *Tartaric acid* is found in the grape, tamarind, mulberry, and sorrels, and is formed for commercial purposes from the sediment, or tartar, deposited from wine after it is decanted from the lees. *Cream of tartar* is formed by a union of this acid with potash, and is called, in chemical language, "bitartrate of potash." Acetic and tartaric acids are both composed of carbon, hydrogen, and oxygen, though in different proportions. *Citric acid* is found most abundant in lemons, and imparts to them their sourness, though it also exists in many of our common garden fruits. Its chemical composition is the same as that of tartaric acid, with the exception of one atom less of oxygen. *Malic acid* is produced abundantly in many kinds of unripe fruit, and forms with lime, soda, and potash, a class of salts called "malates." Its composition is identical with that of citric acid, though its nature is quite different. *Oxalic acid* is composed of oxygen and carbon, and differs from other vegetable acids in containing no hydrogen. It is sold in drug stores in the form of crystals, is exceeding sour, and a deadly poison. It exists in several species of sorrel, imparting to them their acidity; and is also found in the leaves and roots of rhubarb. It forms salts with various bases called "oxalates." The reason why we are not poisoned by eating those vegetables in which this acid is found, is, because the quantity of the acid in them is so small.

Vegetable acids, like the other proximate principles of plants, are formed in the living vegetable, out of the elements drawn from the soil and atmosphere. Nature is thus continually elaborating in the vegetable system, those compounds which plants require; and these are such as can only be formed by a power inherent in vegetables.

J. McKinstry.

Greenport, N. Y. April, 1849.

AMERICAN CAPONS.

In yours of April 4th, you ask me what success I had in making capons. I sent, last fall, my farmer, Mr. Nicholas Feisch, to Bordentown, where, for five dollars, he was taught how to make capons. The first seven he tried, he killed four; the next seven, he killed three; the next 66, he killed only one. Now, as these eight bled to death we ate them. The others we have eaten as capons—not having fattened them, but let them run with the other poultry. Out of the 72, only three were imperfectly altered, and the average weight of these altered capons, not stall-fed, was over seven pounds, double the weight of the unaltered fowls that run with them.

I had one young cock turkey altered, which I will keep until next Thanksgiving day, when we will eat him, and give you his weight, and whether tender or not. You had better come over at that time and taste him.

R. L. Colt.

Paterson, N. J., May 4th, 1849.

THANKFUL FOR SMALL FAVORS.

Although we have lost our anticipated Agricultural School and Experimental Farm, we would not fail to acknowledge, in behalf of the farmers of the Empire State, our indebtedness to the last Legislature for having passed the following resolution:—

"*Resolved*, (if the senate concur,) That a board of eight commissioners, (one from each judicial district,) be appointed by the Governor, whose duty it shall be to meet at the city of Albany on the 16th day of May next, to mature a plan for the establishment of an Agricultural College and Experimental Farm, and prepare a statement of the probable expense of such an institution, and a detailed account of the course of studies and plan of operations recommended, to be delivered to the Governor on or before the first day of September next, to be by him submitted to the Legislature at its next session."

Under the above authority, Governor Fish has appointed the following gentlemen to meet in council on the subject:—

Joseph Blunt, New York, 1st district; John P. Beekman, Columbia county, 3d district; Samuel Cheever, Saratoga county, 4th district; Edmund Kirby, Jefferson county, 5th district; Adrian Lott, Chenango county, 6th district; James S. Wadsworth, Livingston county, 7th district; William Risley, Chautauque county, 8th district.

If the hen did not lay the egg, she could at least cackle to let us know she had been thinking about it.

CULTIVATION OF THE TEAZLE.

In conversing with a gentleman from Lowell, Massachusetts, some time since, I was surprised to hear that the amount of teazles imported from France, and consumed by the manufacturers of that city, alone, exceeded $200,000 worth per annum. On inquiry why this demand was not supplied by our own country, he informed me that the American teazles were deficient in that toughness and elasticity peculiar to the French ones, which he thought was owing to the mode of harvesting and preparing them for market, or, perhaps, from the nature of the soil and climate in which they are grown.

Being desirous to make an experiment in the cultivation of this plant, you will oblige me, and probably others, by throwing some light on the subject through the columns of your journal.

J. N. C.

Monmouth Co., N. J.,
May 5th, 1849.

The fullers' thistle, or teazle, (*Dipsacus fullonum*,) is a biennial plant from four to six feet in height, prickly and rough in the stem and leaves,

and terminated when perfect by rough burr-like fruit, or flower heads, which have been used by cloth dressers from time immemorial, for raising the nap upon flannel and woollen cloths, by means of their crooked paleæ, or spines.

The soils in which the teazle succeeds best, are deep, loamy clays, moderately rich, but it will grow on many other lands by the addition of farmyard or pig-sty manure. The situation should be rather elevated, airy, and if in a cold climate, exposed to the south. In rotation, it may occupy the place of a crop of grain or Indian corn, as the first year, the plants are treated similar to turnips, and the second the crop is ripened; or, it may be cultivated as a fallow to prepare for wheat; and by burning the stalks and refuse after the crop is cut, it will be found not to impoverish, but rather improve the land. The soil should be plowed deep and well comminuted by harrows, forks, or spades.

The proper season for sowing, is the end of May or early in June. The quantity of seed per acre may vary from eight to sixteen quarts, and in quality, it should be fresh and plump. The most expeditious mode of sowing is broadcast, but no crop is better adapted for growing in drills, as the plants require to be thinned and hoed. The distance between the rows may be from two feet to two feet and a half. In the summer and autumn of the first year, the soil should frequently be stirred with a hoe or the plow, and if sown broadcast, the plants may be thinned out to a distance of twelve or fourteen inches every way, or eight to ten inches from each other, if sown in rows. In their young state, they generally stand our northern winters without much injury from frost or snow, and are an excellent crop for clearing land of weeds, from their lateness of hoeing, there being fewer weeds when the season is so far advanced.

Early in the spring of the second year, the ground is again to be worked over with a spade or fork, care being observed that none of the mold fall into the hearts of the plants; and, later in the season, when they begin to spindle, they should receive another dressing by raising the earth around the root stems, with a hoe, in order to support and prevent them from being blown down by the wind. In the north of France, while the plants are in flower, they reduce the number of heads to each stalk, if practicable to, two or three, in order that the energies of the roots may be directed to fewer points.

The harvesting of the crop, when no regard is had for seed, usually occurs in July, of the second year, which is announced by the yellowish color of the heads, soon after the fall of the flowers. They should be cut off, with a sharp knife or hook, just above the upper leaves, with from nine inches to a foot of the stem left on, and received into a basket, or tied up in handfuls by the stem of one that is more perfectly ripened. In the mean time, the hands of the operator should be guarded against the spines by means of strong gloves. Three cuttings are made at intervals of eight to ten days, selecting those only which have yellowish heads. On the evening of the day they are cut, they should be put into a dry shed or barn; and when the weather is fair, and the air clear, they should be taken out, daily, and exposed to the sun, till they become perfectly dry. Much care must be taken, however, that they are not wet, or moistened, by the rain or dew. During this operation, some make use of small poles on which the handfuls are hung, and conveyed to and from the sheds.

As soon as the teazles are completely cured, they should be closely stored in a dry room, till they become tough, of a bright color, and ready for use. They should then be assorted and separated into three different grades. The finest and firmest are called *kings;* the second, *middlings;* and the inferior, unripe, and brittle kinds, *scrubs*.

To save the seed, leave a few of the very best plants uncropped; and then, when the seed is ripe, cut off only the largest and terminating heads, from which the seed can easily be separated by beating with flails, and cleaned by a fanning mill or a common sieve.

GREEN SWARD FOR ROOT CROPS.—Most farmers have tried green sward for potatoes and found it highly successful. Few, however, have tried them with beets, carrots, turnips, &c.; for which the sward is equally beneficial. The only preparation needed, is to add long manure enough to afford a supply of vegetable food below; then turn over a good growth of grass, burying it deeply, and follow with the subsoil plow; and on the surface scatter well-rotted manure, guano, ashes, or plaster, and harrow thoroughly lengthwise of the furrow. The surface is thus well prepared for the seed, and the rotting of the manure, grass, and roots. Keep the under soil loose, while the preparation from the subsoil plow will give a greater extension to the roots. Let some of our readers try this plan at the present season, no matter if the sod is not turned over before the 15th of June. Try it and let us know the result.

THE NONDESCRIPT ANIMAL.—There has been recently exhibited in this city, what purported to be a wonderful animal which was caught by Col. Fremont's party, on their route to California. It appears to combine the form and general appearance of the horse, with the shaggy hide of the buffalo, and a tail without hair. The former, though somewhat singular, appears to have been the animal's own; but the paucity of the caudal drapery, the pilgarlic tail, we opine, is due to the assistance of art, to eke out the rarity. We have conversed with an intelligent Mexican, from Zacatecas, himself another Job, or Jacob, in the extent of his ownership of cattle, sheep, and half-tamed horses, who says horses of this description, though very rare, are still occasionally seen among the numerous herds of Mexico and the country adjoining, commonly known there by the name of *caballos chinos*, or curly-haired horses.

ADVANTAGES OF THE RIDGE SYSTEM OF PLANTING POTATOES.—The ridge, or drill system, (thus ^^,) of planting potatoes on moist, low ground, gives double surface, double light and heat, double air, double protection against rain, double depth of mold and drainage, and is altogether superior to the flat-surface mode of planting.

Ladies' Department.

A FEW MORE TRIFLES FOR THE LADIES.

To Purify Tallow.—Mix 5 parts of beef tallow with 3 parts of mutton tallow, in a copper or iron kettle, with half a pint of water to each pound of grease. When melted, mix 8 ounces of brandy, 1 ounce of salt of tartar, 1 ounce of cream of tartar, 1 ounce of sal ammoniac, 2 ounces of pure and dry potash, with the tallow. Boil fifteen minutes, and set off to cool. When cold, take off in cake and bleach it in the air and dew a few days and nights. It will then be hard and white. Candles, with a fine cotton-yarn wick, (6 to a pound,) will burn 14 hours.

Tomato Catchup.—First bake your tomatoes, then squeeze them through a sieve. Add to 6 quarts of juice an equal quantity of wine vinegar; boil slow until it begins to thicken; then add cloves, allspice, and pepper, ½ an ounce each, cinnamon ¼ of an ounce, and 2 nutmegs, all finely powdered. As it thickens, add four spoonfuls of salt, and when done, pour out in an earthen dish to cool. Bottle, cork, and seal, and it will keep years in a warm climate.

Potato Pudding.—Take ½ of a pound of sugar, ½ ditto of butter, and beat well together; add one pound of boiled potatoes, (Irish or sweet,) rubbed fine through a collander or mashed; six eggs, the whites and yolks beat separately, and a wine-glassful of brandy and one of wine, a trifle of rose water, and cinnamon or nutmeg, as much as you like.

Rice Bread.—Take six tablespoonfuls of boiled rice, and one of butter; rub them together, and then pour in half a pint of milk; add two eggs, and six tablespoonfuls of wheat flour. Mix all well together, and bake a little brown; and you will have a very good and wholesome kind of bread. SOLON.

Columbia, S. C., April, 1849.

TO MAKE DRAWN BUTTER.

INTO a quarter of a pound of butter, rub a tablespoonful of flour, and half a teaspoonful of salt, until it becomes a smooth batter. Have ready half a pint of boiling water, in a sauce pan; stir the batter into it until perfectly smooth, and let it simmer for fifteen minutes, stirring it frequently. Some cooks will tell you it must be stirred all the time it is on the fire, which is quite unnecessary, as all that is intended by such directions is, that it must be watched and stirred often enough to prevent it from becoming "lumpy," and burning to the bottom of the sauce pan.

This drawn butter is the foundation of most gravies and sauces—as oyster sauce, celery sauce, &c. &c., and the following cheap sauce for puddings is among them:—

For six people, make the quantity directed in the above receipt, and have ready in a bowl six large teaspoonfuls of good brown sugar; half a teaspoonful of powdered cinnamon, or half a grated nutmeg, moistened with a wine-glassful of white, or home-made currant wine; pour the drawn butter, while boiling, on this; stir it well, and serve in a sauce bowl.

If wine is thought to be too expensive, or is objected to for other reasons, lemon juice is a delicious substitute, but it requires double the quantity of sugar; or, if your vinegar is pure and well flavored, use the proper quantity of that, instead of the wine. E. S.

Eutawah, May, 1849.

HOW TO WEAN A SETTING HEN FROM THE NEST.

YOUR correspondent, at p. 224, volume seventh, of the Agriculturist, in his sensible remarks on the subject of Dorking fowls, speaks of their being "rough nurses," and advises, as the best way of rearing their broods, that the eggs be hatched by other hens; and then says: "The only question is, how the hen is to be managed when the sitting fit comes on; for they are most persevering sitters." I am sorry to say I have never been able to procure pure Dorkings to experiment upon, and therefore cannot tell how my method might answer with them; but with my mongrel hens, which are very good of their kinds, I have no difficulty. However persevering they may be, I manage to tire them out. When I find one determined to sit, that I know to be an indifferent mother, I watch her closely, and whenever I find her on the nest, I apply the hydropathic remedy, a cold bath, If the weather be warm, I plunge her, head and all; if cool, I only dip her breast in cold water, and put her on the perch. Three or four such immersions always effect a complete cure.

When two small broods are brought out within ten days of each other, and I do not want to lose the time of two nurses, I give both broods to the hen that hatched first, and shut the other up, at a distance from the coops, where she can neither see nor hear her chicks. After four or five days' solitary confinement, I take her at night, and put her into the hen house with the other fowls, and always find that she leaves it in the morning to seek her food with them; and that, in a week or so afterwards, she begins to lay again. *M.*

May 5th, 1849.

CLEARING LAWNS.—The most effectual method of clearing lawns and pleasure grounds of snails, grubs, and worms, that I have ever tried, is to allow my fowls to run at liberty in the autumn, and early spring. They will pick every blade of grass clean; scratch around the roots of trees and shrubs, fly into the branches, and clear them of larvæ and chrysalides, hunt under the edges of stones and fences, and drag them to light; and finally, they greedily eat the seeds of weeds, and such flowering shrubs as become almost a nuisance by springing up by thousands, if you neglect to gather the seed vessels in the fall.

FRIED POTATOES.—The French cooks at the large hotels are making this dish very fashionable. The potatoes are peeled, wiped, and cut into thin slices, then thrown into a fryingpan containing an abundance of hot lard. As soon as they become brown and crispy, they are thrown into a collander to drain, then sprinkled with salt, and served up as hot as possible. It is used at breakfast.

Boys' Department.

FACTS IN NATURAL HISTORY.

When I was in New Orleans last winter, I met with a most worthy old gentlemen, Judge Strawbridge. I give his name, because there are a good many "old boys" about Philadelphia, that will like to hear of him; and he invited me to go with him over to his place, across Lake Ponchartrain.

Well, the Judge is very intelligent, and tells a great many very interesting stories. Here is one of them:—"That tree you are looking at," said he, as I was looking at a famous old oak that he did not cut down when he built a house close by, "reminds me of a little anecdote. The first summer that I spent here, at Covington, I lived in a house a mile below. I was sitting one evening on the back gallery, watching the caterpillars crawling along the ground under an old oak like this, when my curiosity was excited to see one great fellow, about three inches long, going by at a most rapid rate, quite unaccountable. I got up directly, and went down to see whether he had got a locomotive in him, or what; when, behold, a great long-legged kind of wasp, that we have here, had mounted the worm a-straddle, as we would a horse, and was riding him to the shambles, intending, no doubt, to butcher him about sundown, for supper. It was so curious a sight, that I determined to watch the sequel, and see what the wasp would do with his wormship. But I missed it; for, after riding several yards, he passed under a small tree, and directly I heard a rustling in the leaves overhead, and down dropped a lizard directly on the wasp and worm, and knocked the rider heels over head out of sight into the grass, and then gathered up the worm, and in a half minute after had him up the tree, eating him at his leisure, I suppose. This is the way with all nature—the strong rob the weak, which are often sent supperless to bed. I told the story to my family, and they laughed as though they doubted, or disbelieved, the fact. This is a trait in human nature, too. Facts are often doubted, and fables believed.

"Well, years after, my wife and I were sitting under this very tree, when along came another caterpillar and his rider. Now, then, let us watch this, and see what the rider will do with his horse, said I. 'Oh,' she exclaimed; 'but here comes the conqueror for the 'lion's share.' And sure enough, like a hawk pouncing upon his prey, down came another lizard. Ah, well then, let us watch the battle, and see what the lizard will do with the spoil. But we did not; for while the wasp and lizard were fighting for their prey, out came a toad from that very hole there at the root of the tree, and, unobserved by either of the combatants, hastily gobbled up the worm and hopped back again to his hiding place, while the lizard was running around like something half-crossed, or mad, at the loss of his supper."

Such was the story, and it interested me very much, and I hope it will all the boys who read it. If the snake had been there to catch the toad, and the owl to catch the snake, and the boy to catch the owl, how truly natural dispositions would have been illustrated.

Here is another curious fact related by the Judge. "When I first came to New Orleans," said he, "the old Carondelet Canal was the only means of communication with the lake. Upon this, as well as upon the bayou St. John, into which the canal opened, was a great mass of some kind of water plant, a sort of vine, that so covered the water and clung to the bows of vessels as seriously to impede navigation.

"Some time afterwards, there came a Yankee to New Orleans, (I don't mean to say only one—their name is legion,) and he brought with him another 'water plant,' whether on speculation, or not, I don't know. But this was not a vine. It more nearly resembled a house leek than anything else. I forget what he called it. Well, he put it to grow in a water cask, and it multiplied and spread all over the top, and then it broke off in pieces and floated over and down the ditches and finally into the canal. The Frenchmen found and *saved* the Yankee innovation, but on it went spreading, in spite of curses, and in a few years it was all over the canal and down the bayou. In the mean time, where was the old pest of the canal? Gone entirely. The Yankee innovator had rooted the old *habitant* out, and grew there in its stead. Nobody cared for this; it was not in the way, and it made a very good shade for alligators and catfish.

"After a time, I was walking along the canal, and behold, the Yankee water plant was not there. When, why, or how it had gone, none could tell, but it was gone."

Back of the city, along the old ridge road, (land that is not absolutely under water,) there are some extensive commons. While passing down the Ponchartrain Railroad, the Judge called my attention to this, and then said: "a few years ago, this land was all covered with a perfect wilderness of burdock. It was a most decided nuisance. But little grass could grow, when all the ground was covered with these broad shading leaves. Horses and mules that run out at common, were a sight, with their tails and manes loaded and hair all matted together. What influence was brought to bear upon this plant, I know not, but it disappeared as suddenly and as mysteriously as the water plant—all gone—not a root to be found. What was the cause, who can tell? Ah, well, we shall soon disappear, too, and it will only be a few old grey heads, like you and me, that will remember that we were once here."

Now, boys, if you like these anecdotes, I have more of them yet to give you some day. Solon.

Sparta, Geo., April 8th, 1849.

An Experiment.—Early in the morning, when there is likely to be a hot, sunny day, make a mark on a fence or wall, level with the top of a shoot of a hop or grape vine. Although the sun shine hotly on it during the day, it will not increase. But observe it again early the next morning, and you will find that it will have grown from half of an inch to two inches.

Value of Education.—If a man empties his purse into his head, no one can take it from him.—*Dr. Franklin.*

FOREIGN AGRICULTURAL NEWS.

By the steamer Hibernia, we are in receipt of our foreign journals to 27th April.

MARKETS.—*Ashes*, slow of sale; *Cotton* remains unchanged; *Flour and Indian Meal* have declined, and a heavy market in general for American products.

Money continued plenty at a low rate of interest.

The Weather has been as severe in Europe as here. Snow fell on the 20th of April in London, and other parts of England, sufficiently deep to cover the trees and earth. Hard frost followed.

Couve Tronchuda, or Portugal Cabbage.—The seeds of this plant may be sown and treated exactly like those of the common cabbage. The white ribs make a dish somewhat resembling seakale, and the heart boils very tender.

Amount of Combustible Matter in Soot.—The "Farmers' Almanac" gives an analysis of soot, showing that of 1,000 parts, 671 consist of combustible matter—in other words so much fuel wasted.

Shipment of Eggs from Spain to Ireland.—A cargo of eggs, direct from Spain, recently arrived at Cork.

Planting of Potatoes in Ireland.—The planting of potatoes is going on most vigorously in every part of Kerry. There is also sown in the same county, a very small breadth of wheat, as well as large quantities of oats.

A Benevolent Rake.—The Marquis of Waterford, of knock-down-watchman memory, in order to give food to the peasantry, and thereby repress crime, is now employing on his estate, in Ireland, 1,000 laborers in draining, ditching, hedging, and other occupations.

Packing Potatoes for Long Voyages.—When quite ripe, pack them in dry clay, rammed tight in a stout wooden box, in a part of the ship perfectly dry.—*Agricultural Gazette.*

Potatoes in India.—The potatoes from Bombay, Darjeeling, and Cherra Poonjee seed; were wonderfully fine and healthy and to enable the public to form some idea of the state of perfection this grand and staple vegetable has been brought to, in this district, it is here recorded that 40 potatoes out of one garden weighed 20 lbs. The skin of all delicately white and fine, and every potato free from knots.—*Jour. Agricultural and Horticultural Society of India.*

New Use of Peat.—A valuable discovery has recently been made in Paris, in extracting, by a chemical process, ammonia, naptha, soda ash, oil, and spermaceti from peat. At an expense of £30, the product of 100 lbs. of peat will amount to £148. This is regarded as one of the greatest discoveries of the age.

A Sow Living Five Weeks Without Food.—A farmer, in Brickendon, lately missed a fat sow for five weeks, when she was found alive under a barn floor. The poor animal, which weighed 224 lbs. when missed, weighed only 70 lbs. when discovered, having wasted 154 lbs. When released, she could not rise from the ground; but, after having some milk, she could walk, and has since rapidly improved; in fact, she is said to be getting quite fat again.—*English Paper.*

Directions for Putting Up Seeds for Long Voyages.—All seeds should be picked when fully ripe, and carefully kept dry during the voyage. Various means of doing this have been tried, such as soldering in tin cases, hermetically sealing, &c. But perhaps the best way of all is, to wrap your seeds in separate bags of thick brown paper, and put all these bags together in a strong canvas sack, which must be so laid, in a dry place, as to be easily got at during the voyage; then you must choose fine dry sunny days, at intervals, on which the sack may be emptied out, and each paper bag carefully examined; if any have become at all damp, hang them up to the roof of the cabin, or other convenient place, until dry, and then restow them. The stern cabin, in the poop, is the best place for keeping your seed bag.—*Gardeners' Chron.*

Pig Tails.—Pigs with little hair on their bodies are most liable to lose their tails, showing a weakness of the tegumental structure. It may be prevented by crossing with a more hairy breed. The writer has a black sow, principally of the Berkshire breed, whose first litter, by a boar very similar to herself, nearly all lost their tails. Since then, she has had two litters by a white Yorkshire boar, not one of which has been deprived of this ornamental appendage.—*Ib.*

Curious Arrangement of the Seeds in an Orange.—A gentleman of Helston, Cornwall, on opening an orange the other day, found 30 seeds all attached together, and very much resembling a bunch of grapes. The orange was of ordinary size, but all the seeds were much beyond an average. The most singular part of this *lusus naturæ* is, that the bunch of seeds was suspended by a stem growing from the side of the orange.—*Ib.*

Difference in Quality between Stall-fed and Barn-yard Manure.—The analysis of manure recently made at the London Agricultural College, from boxes and from ordinary yards, is as follows:—

	Box Manure.	Yard Manure.
Water,	71.4	71.
Nitrogenised matter, capable yielding ammonia, 100 parts *dried*,	2.37	1.7
Salts soluble in water, containing organic and inorganic matter,	10.7	4.6
Organic,	6.42	1.82
Inorganic,	4.28	2.78
Phosphoric acid,	0.3	0.26
Alkalies—Potash and soda,	2.	0.08
	97.47	82.24

Sale of Louis-Philippe's Stud.—There were lately sold at the Park of Monceaux, in France, the stallions, brood mares, and colts of the *haras* of St. Cloud, Meudon, and Versailles; but the prices obtained were low. Va-nu-Pieds, a seven-year-old stallion, was sold to M. Debéague for 1,050 francs, which is not a fifth part of his value in ordinary times. Rabat Joie, a six-year-old stallion, which had been valued a 6,000 francs, was sold to M. Guilloteau for 1,075 francs. Saklawy, a nine-year-old stallion, presented by the Viceroy of Egypt to Louis-Philippe, was bought by the Minister of Agriculture for the haras of St. Cloud for 3,020 francs; orders had been given to go as high as 6,000 francs. A bay brood mare, presented to Louis-Philippe by the Sovereign of Mascata, was sold to M. Bayeux for 700 francs. Among the best prices was 4,150 francs for a bay colt purchased by M. Perceval, and 5,200 francs for a four-year-old, purchased by M. Manuel, an *agent-de-change*. A few carriages were disposed of at this sale. The *char-a-banc*, in which was the Ex-king with the Royal Family, when Lecomte fired at his Majesty at Fontainebleau, and which cost 18,000 francs, sold for 2,200 francs. It was purchased by the sons of the late Ibrahim Pascha, who intends to send it to Egypt. The small *coupe* in which, notwithstanding its restricted space, Louis-Philippe, the Queen, and three persons of the family, made their escape to St. Cloud on the 24th of February, was sold to M. Thierry for 865 francs. An old landau, in which Louis XVIII. returned from Hartwell to St. Ouen, in 1814, was sold to a breaker-up for 150 francs.—*Galignani's Messenger.*

Editors' Table.

ANNUAL ADDRESS BEFORE THE NEW-YORK STATE AGRICULTURAL SOCIETY, FOR 1849.—We are happy to announce to our readers that the distinguished agricultural chemist, lecturer, and author, Professor James F. W. Johnston, of England, has consented to deliver the annual address at the State Fair, to be held at Syracuse, in September next. Professor Johnston has, for many years, occupied the first position among the reliable teachers of modern scientific agriculture, and we shall hail his presence among us with the sincerest pleasure, not only from the benefit which American farmers may derive from intercourse with him, but from the enlarged views he may be enabled to acquire from the new multiplied phases in which his favorite agricultural researches will be presented to him.

We understand he expects to remain in this country and Canada for a year, and we bespeak for him that attention which his own character and the objects he has in view, equally with the well-known hospitality of American agriculturists, will not fail to secure him.

A LARGE PORKER.—Mr. T. H. Botsford, of Middlebury, Ohio, butchered, last season, a hog, seventeen months old, that weighed, when alive 825 lbs., and 780 lbs. after it was dressed, being a loss of less than 5½ per cent.

GROWTH OF PLANTS IN CONFINED AIR.—It is now well known that a plant flourishes as well or better when grown in soil in a transparent vessels with the external air excluded, than when exposed toits influence. Mr. Leeds, druggist, corner of Atlantic and Court streets, Brooklyn, has a monthly rose in a large glass jar, planted in the usual soil. This jar is hermetically sealed, and yet the plant has flourished, its leaves being of a healthy green, and it grows faster, and blossoms earlier, than any similar plant exposed to the atmosphere. It has been kept more than two years in this state, having been opened only twice to clean out the grass, which grows, also, more rapidly than from the pots exposed.—*Mr. Partridge.*

TEA GROWN IN THE UNITED STATES TWENTY YEARS AGO.—Mr. J. W. Averill, of Plymouth, Michigan, in a communication in the "Dollar Newspaper," says, that in "about the year 1820, I had a plant come up in a bed in my garden, which I ascertained to be the tea plant, from which I procured six pounds of as good tea as ever came from China. For several years, I cultivated the bush, and made many experiments in the curing it, until it became a matter of notoriety. I finally moved from the place I then lived on, and withal removed the tea plant; and the consequence was, that it died. And now, if you can tell me the way to get hold of some of the seeds, I will undertake to propagate the plant to its utmost perfection."

THE QUADRUPEDS OF NORTH AMERICA, by John James Audubon and Rev. John Bachman. New York: V. G. Audubon, 43 Beaver street. To be completed in 30 numbers, imperial octavo, at $1 each. We have received the first number of this splendid work, containing five illustrations colored after nature. Only the smallest of our quadrupeds will be given of full size, the larger to be reduced to bring them within the compass of the page. Although the quadrupeds of North America have been partially illustrated and described by several authors, their full and accurate history has never yet been given. The work before us is undertaken by those whose names are a sufficient guarantee that it will be done with such thoroughness and accuracy, as to commend it to the lovers of science and nature wherever it may be read. We need scarcely add, that, to the gentlemen above-named, we are indebted for the splendid work on the Ornithology of America, which has given a world-wide fame to these distinguished authors, and reflected so much credit on our native American genius.

BAGLEY AND CO.'S GOLD PENS.—"Blessed be the man who invented gold pens!" Elastic, cleanly, enduring, beautiful, and a never-failing friend to the writer. A good one will last a man's life time, properly taken care of. Page after page may be written rapidly, smoothly, up to volumes, without requiring mending or renewal. "Blessed be the man," said a certain knight of old, "who invented sleep;" but we say, again, "Blessed be the man who invented gold pens."

THE WOOL GROWER AND MAGAZINE OF AGRICULTURE AND HORTICULTURE.—This is a new periodical, as we take it. being No. 2, volume 1, but the only specimen we have received, and this without names of editor, publisher, price, or period of issuing, we are left entirely to conjecture on the subject. It is dated Buffalo, May 1st, 1849, and we suppose is from our staunch, old, agricultural friend, T. C. Peters, Esq., as editor, proprietor, and publisher, for all of which we deem him entirely competent. If there happen to be a *hiatus* in some of the minor forms of a periodical—there is none in the matter of the work. It exhibits sound, practical, matters-of-fact sentiments on one of the leading and most important branches of American industry.

MAMMOTH MULES.—The Cincinnati papers speak of an exhibition there of two mules, which are the largest ever seen in that city. One, a black male, four years old, by Everett & Young's jack, Mammoth, Montgomery county, Kentucky, is eighteen hands high. The other, the same age, a brown female, by John Scott's jack, Franklin county, in the same state, is seventeen and a half hands high. The two were put on the scales together, and found to weigh 3,000 pounds. The price demanded for them is $200 each. Both raised by a Mr. Thomas, in Scott county, Ky.

ACCIDENT TO THE CHARTER OAK.—We understand that the old Charter Oak, at Hartford, Ct., was set on fire a few weeks ago, by a cracker thrown into the hollow of the trunk by some reckless boys, which caused considerable injury to that much-revered and national tree.

LITERARY HABITS OF THE HOG.—From the Transactions of the Worcester-County Agricultural Society, for 1848, we copy the following racy pun on swine:—The hog is exceedingly *litterary* in his habits. His works are published in large issues of 10 and 12mo., with an appendix at the end of each, *interlarded* with liberal quotations from *Greece*. Although he has dealt somewhat largely in *stocks* and *banks* and domestic produce, his property, like that of most purely literary men, is his *pen*. Like the good and great, in all ages, he has his imitators and counterfeiters. His posthumous benefactions find their counterfeiters "*in linked sweetness long drawn out*," not only at Bologna, but in every other quarter of the world. It is said that some of the sweetest and rarest morsels imported into Eden, when Adam was making preparations for housekeeping, were conferred upon Adam's rib, which he spared for domestic use. So, by a singular coincidence, some of the sweetest combinations of animal organization are conferred upon our friend's *spare rib*. He is in some respects a peripatetic philosopher, making all his discoveries in his rambles. He is no superficial searcher after truth. He skims not over the surface. He goes to the *root* of the matter. He takes things, not by guess, but knows. If he is not in favor of the "free-soil movement," he is of the *free movement of the soil*, and manifests his attachment to his principles by incessant labor in the cause.

REVIEW OF THE MARKET.

PRICES CURRENT IN NEW YORK, MAY 14, 1849.

ASHES, Pots,	per 100 lbs.	$5 50	to	$5 63
Pearls,	do.	5 50	"	5 75
BALE ROPE,	lb.	9	"	11
BARK, Quercitron,	ton,	26 00	"	28 00
BEANS, White,	bush.	75	"	1 25
BEESWAX, Am. Yellow,	lb.	19	"	22
BOLT ROPE,	do.	11	"	12
BONES, ground,	bush.	40	"	55
BRISTLES, American,	lb.	25	"	65
BUTTER, Table,	do.	15	"	25
Shipping,	do.	9	"	15
CANDLES, Mould, Tallow,	do.	10	"	13
Sperm,	do.	25	"	40
Stearic,	do.	20	"	25
CHEESE,	do.	5	"	10
COAL, Anthracite,	2,000 lbs.	5 00	"	6 00
CORDAGE, American,	lb.	11	"	13
COTTON,	do.	6	"	10
COTTON BAGGING, Amer. hemp,	yard,	15	"	16
FEATHERS,	lb.	30	"	40
FLAX, American,	do.	8	"	9
FLOUR, Northern, Southern and West'n	bbl.	4 38	"	5 31
Fancy,	do.	5 50	"	6 75
Richmond City Mills,	do.	6 75	"	7 00
Buckwheat,	do.	—	"	—
Rye,	do.	2 75	"	2 88
GRAIN—Wheat, Western,	bush.	1 00	"	1 25
Red and Mixed	do.	95	"	1 10
Rye,	do.	58	"	59
Corn, Northern,	do.	60	"	65
Southern,	do.	52	"	62
Barley,	do.	58	"	59
Oats,	do.	29	"	40
GUANO, Peruvian,	2,000 lbs.	50 00	"	50 00
" Patagonian	do	35 00	"	40 00
HAY, in bales,	do	42	"	50
HEMP, Russia, clean,	ton.	215 00	"	230 00
American, water-rotted,	do.	160 00	"	220 00
American, dew-rotted,	do.	140 00	"	200 00
HIDES, Dry Southern,	do.	8	"	9
HOPS,	lb.	4	"	12
HORNS,	100.	2 00	"	10 00
LEAD, pig,	do.	4 70	"	4 75
Pipes for Pumps, &c	lb.	5	"	7
MEAL, Corn,	bbl.	2 87	"	3 00
Corn,	hhd.	13 00	"	13 50
MOLASSES, New Orleans,	gal.	22	"	26
MUSTARD, American,	lb.	16	"	31
NAVAL STORES—Tar,	bbl.	1 75	"	2 00
Pitch,	do	1 25	"	1 75
Rosin,	do.	85	"	95
Turpentine,	do.	2 37	"	2 75
Spirits Turpentine, Southern,	gal.	32	"	33
OIL, Linseed, American,	do.	59	"	61
Castor,	do.	1 25	"	1 50
Lard,	do.	60	"	70
OIL CAKE,	100 lbs.	1 00	"	1 50
PEAS, Field,	bush.	75	"	1 25
Black-eyed,	2 do	1 25	"	1 50
PLASTER OF PARIS,	ton.	2 25	"	3 00
Ground, in bbls.,	of 300 lbs.	1 12	"	1 25
PROVISIONS—Beef, Mess,	bbl.	9 00	"	13 50
Prime,	do.	5 00	"	8 50
Smoked	lb.	6	"	12
Rounds, in pickle,	do.	4	"	6
Pork, Mess,	bbl.	10 00	"	13 00
Prime,	do.	7 00	"	10 50
Lard,	lb.	6	"	7
Bacon sides, Smoked,	do.	3	"	4½
In pickle,	do.	3	"	4
Hams, Smoked,	do.	5	"	9
Pickled,	do.	4	"	7
Shoulders, Smoked,	do.	4	"	5
Pickled,	do.	3	"	4
RICE,	100 lbs.	2 88	"	3 44
SALT,	sack,	1 17	"	1 30
Common,	bush.	20	"	35
SEEDS—Clover,	lb.	5½	"	—
Timothy,	bush.	2 00	"	3 50
Flax, clean	do.	1 30	"	1 40
rough,	do.	1 20	"	1 30
SODA, Ash, cont'g 80 per cent. soda,	lb.	3	"	—
Sulphate Soda, ground,	do.	1	"	—
SUGAR, New Orleans,	do.	4	"	6
SUMAC, American,	ton,	35 00	"	37 00
TALLOW,	lb.	7	"	8½
TOBACCO,	do.	3	"	8
WHISKEY, American,	gal.	21	"	23
WOOLS, Saxony,	lb.	35	"	60
Merino,	do.	25	"	35
Half-blood	do.	20	"	25
Common do		18	"	20

NEW-YORK CATTLE MARKET.

At Market.—1,500 Beef Cattle, (1,300 southern, the remainder from this state and east,) 60 Cows and Calves, and 3,000 Sheep and Lambs.

Beef Cattle.—The market is firm in prices. The sales run from $7 to $9.25 per hundred. The number of head on hand, unsold, is estimated at 100.

Cows and Calves.—These vary from $20 to $50.

Sheep and Lambs.—These range from $2.50 to $5. All sold.

Hogs.—But few in market, ranging from 4 to 5 cents per pound, wholesale, and from 4½ to 6 cents retail.

REMARKS.—The change in prices since our last has been trifling.

The weather in the latter part of April was so severe, that snow fell as far south as Georgia and Mississippi. Frost followed, and the result was, that nearly all the cotton and corn in that region was killed and had to be replanted. But such is the scarcity of seed, that we fear this cannot be done with all the cotton fields, consequently, the ensuing crop must be short; but how much less than last year, time only can determine. As corn in the west was unplanted at the time of the frosts, and as there is plenty of time for it to grow at the south, this crop will be more certain. Fruit and all garden vegetables have also suffered much at the south; at the north they have been little injured. The season is very unpropitious here, however, and it is rare that we encounter one so backward.

TO CORRESPONDENTS.—Communications have been received from Solon Robinson, E. S., John P. Norton, S. P. Chapman, C., Sally Greenleaf, J. McKinstry, A. L. Elwyn, and Reviewer.

Breeding and Management of Stock.—S. P. C., of Clockville, Madison Co., N. Y., requests that Mr. Sotham may continue his article on the management of stock.

Household Matters.—S. G., of "The Hills."—If you have had forty years' experience in housekeeping, and can furnish *short*, practical articles on cooking, or other subjects connected with domestic economy, they will be thankfully received.

ACKNOWLEDGMENTS.—Annual Report of the Commissioners of the U. S. General Land Office, with a valuable Appendix; Call of a Convention of Inventors, by the Inventors' National Institute, to have been held in the City of Baltimore, March 6th, 1849, but received too late for notice.

PERUVIAN GUANO

FOR Sale, at Bating Hollow, Long Island, by
jy AZEL DOWNS.

MORSE'S GREY.

THIS celebrated horse will stand the ensuing season at the stable of James Rice in Speigletown, three miles north of the village of Lansingburgh. He is a beautiful dapple grey, 15¾ hands high, strongly and finely proportioned, has trotted his mile in 2 minutes and 50 seconds, is a square trotter, and combines first-rate trotting qualities and great powers of endurance, with unsurpassed gentleness and docility. His colts are justly celebrated for speed, bottom, and good temper, and are eagerly sought after in the market, and command prices ranging from $150 to $500. The very high reputation of his stock as road horses, and the extraordinary prices they command, renders him by far the most profitable horse to breed from of any in the country. Mares sent from a distance will have such attendance and keeping as the owners desire, and upon the most reasonable terms. The horse will be under the charge of his former owner, Mr. Calvin Morse. Terms, $10 the season. Insurance to be agreed upon. Communications addressed, J. T. GRANT, P. M. Junction, Rensselaer county, will receive prompt attention. my 3t

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SHORTHORN DURHAMS AT AUCTION.

THE subscriber being about to dispose of 50 acres of his farm, will offer at public sale 30 head of Shorthorn Durham cattle, (being about one half of his present herd,) on the 13th day of June next, at 11 o'clock in the forenoon, consisting of yearlings, two-year and three-year-old heifers, cows, and 11 young bulls from 10 months to 2½ years old. Great care has been observed, and considerable expense incurred in selecting and breeding this stock, with reference to purity of blood and dairy qualities. The awards of the New-York State Agricultural Society, and the American Institute, of New York, attest the estimation in which this stock is held, whenever it has been exhibited for competition. About eight head of the above cattle are a purchase made from E. P. Prentice, Esq., of Albany, last May, being all of the shorthorns of that gentleman, and the product of his four selected cows, retained at his public sale. The animals have the strain of blood of the herd of Mr. Whitaker, of England, from whom Mr. Prentice made his principal importations. The other part of the lot of young animals partakes largely of the blood of the celebrated herd of Thomas Bates, Esq., of Yorkshire, England, from whom my importations have been derived, and are mostly of the get of my imported bulls, Duke of Wellington, and the premium bull Meteor. The heifers and cows are and will be principally in calf by these bulls.

For the information of southern gentlemen, who desire to introduce Durham stock into that region, and who entertain the opinion that climate is incongenial to its successful propagation there, I here introduce an extract from a letter I received from A. G. Summer, Esq., editor of the "South Carolinian," dated Columbia, 25th January, 1849.

"The bull you sold Col. Hampton, of this state, gives him great satisfaction. He is a fine animal and I only wish you could see some 20 head of his get now in his yard. They are the most superb yearlings ever bred in the south."

Further particulars and pedigrees of the stock will be issued one month previous to the sale. A credit of 6 to 18 months will be given.

GEO. VAIL.

apr.3t *Troy, N. Y., April 1st, 1849.*

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PARSONS & CO., at Flushing, near New York. The proprietors of this establishment invite public attention to their large assortment of every desirable variety of Fruit and Ornamental Tree or Shrub. Their importations of everything new in Europe are annually continued, and they offer a very large variety of Ornamental Trees and Shrubs imported expressly for arboretums and pleasure grounds. Their collection of Roses is annually enriched by novelties from abroad, many of which may be found described in their new work on the Rose, recently published. Fruit Trees receive their particular attention, and are propagated under their personal supervision; this care, with their possession of extensive specimen grounds, in which is tested every variety of fruit they cultivate, enables them confidently to guarantee the genuineness of the varieties.

Their care in pruning and cultivation enables them also to send out thrifty and well-formed trees. From their large scale of propagation, they can offer to dealers very liberal discounts, where hundreds or thousands are taken. Orders or inquiries can be addressed to the proprietors at Flushing, near New York, where catalogues will also be furnished. They have established a Branch at Brighton Depôt near Boston and by the entire success of their trees transplanted thither have thoroughly proved the superior adaptation of Long-Island Trees to the soil and climate of any part of New England. This they attribute to the perfect maturity attained by the wood before frost, which renders the trees suitable for transportation to any latitude.

At the season of transplanting, a salesman will be at their Brighton Branch to furnish those who may prefer obtaining their supply thence. mhtf

VIRGINIA LANDS.

THE attention of Northern Farmers who wish to purchase in Fairfax County, Va., is invited particularly to two farms for sale, three miles east from Fairfax Court House, thirteen from Alexandria, and fourteen from the city of Washington. There are no buildings on either tract, but, by following the custom of the country, comfortable and temporary ones can be cheaply built. The soil is well adapted to farming purposes, and there is timber on them, near two sawmills.

These farms would sell in the north, for from $50 to $100 per acre, and can be bought here in a more pleasant and healthy climate, one for eight, the other ten dollars per acre, on easy terms, and a good title given.

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f. tf. H. FULLER.

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THE PLOUGH, THE LOOM, AND THE ANVIL.

THE object of this work is not merely to amuse its readers with accounts of extraordinary crops from single acres, and prodigious weights of bullocks, sheep and hogs. No!—Though the purpose is to keep the reader advised of all *really new and valuable* discoveries and improvements in the implements and animals employed in agriculture, and in the processes and principles of Husbandry in all its various branches, this is not all. If it were, the single word PLOUGH might sufficiently indicate that purpose; but the fact is otherwise. By adding to it the LOOM and the ANVIL, the Editors design at once to indicate that, in their belief, the Plough never has, nor ever can prosper so well, as when the Loom and the Anvil are at work as near to it as the nature of things will admit; and therefore, that the Planter and the Farmer ought heartily to unite to cause the establishment of an efficient and permanent policy, such as will draw around them, not only the Loom and the Anvil, but the Saw, and the Trowel, and the Lapstone; the Coal Heaver and the Iron Monger—in order that those engaged cultivating the soil may save, in the sale of their produce both time and labor, for the enrichment of their lands and themselves.

But this is not the place to go into arguments to prove these positions. We respectfully solicit those to whom our best days have been devoted, to study the subject in the *pages of the work we offer*; for, of all classes of society, this question of *Protection* or *Free Trade*, is most important to those whose interest it is to multiply prosperous *consumers*, not *rivals* in the production of the fruits of Agriculture.

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